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AUTHOR Grant, James P.
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ABSTRACT

This report maintains that it is just as unacceptable to allow millions of children to die each year from needless infection and malnutrition as it is to let them die in sudden emergencies of drought and famine. The world now has the means to attack childhood malnutrition and disease on a massive scale and at an affordable cost. Four million children's lives have been saved in the last five years by nations which have mobilized to put low-cost solutions into effect. Discussed are (1) potential benefits to social development of today's new capacity for mass communication; (2) scientific information which would enable parents to protect the lives and growth of their children; (3) the current success and future potential of oral rehydration therapy; (4) the spread of low cost immunization in the 1980s throughout the developing world; (5) the benefits of social mobilization to achieve specific health goals; and (6) the use of growth checking as a means of information dissemination to parents. The report concludes that the strategy of social mobilization may allow almost every individual and organization in the world to become involved in the fight against poverty. Insert panels describe the experiences of various nations in bringing about drastic improvements in child survival and development. A statistical section provides figures for 130 major nations for child survival rates, nutrition, health, education, population, and economic progress, as well as selected data for less populous countries. (BN)

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THE STATE OF THE WORLD'S CHILDREN 1987

James P. Grant
Executive Director of the
United Nations Children's Fund
(UNICEF)

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THE STATE OF THE WORLD'S CHILDREN 1987

The State of the World's Children 1987
UNICEF, Division of Information and Public Affairs,
UNICEF House, 3 U.N. Plaza, New York,
NY 10017, USA

The State of the World's Children 1987 is published in book form by Oxford University Press. The book is a special 40th anniversary edition and includes an examination of the impact of recession on children and 30 additional colour charts showing the main changes for the world's children over the past 40 years.
For details, see back cover.

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Capacity and morality

We now have the knowledge to enable parents to protect child health at very low cost. And we now have the capacity to communicate that knowledge to the majority. The time has therefore come to decide that it is just as unacceptable for so many millions of children to die every year of needless malnutrition and infection as it is for them to die in the sudden emergencies of drought or famine.

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THE STATE OF THE WORLD'S CHILDREN 1987

James P. Grant
Executive Director of the
United Nations Children's Fund
(UNICEF)

The under-five mortality rate (U5MR) is the number of children who die before the age of 5 for every 1,000 born alive. This year, it is the U5MR figure which governs the order in which the countries are listed in the statistical tables of The State of the World's Children report.

Figures given for the under-five mortality rates of particular countries, in both the text and statistical tables of this report, are estimates prepared by the United Nations Population Division on an internationally comparable basis, using various sources. In some cases, these may differ from national estimates.

Capacity and morality

In the forty years since UNICEF was founded, there has been a major change in global morality. Today, our world no longer allows millions of its children to die in the sudden emergencies of drought or famine anywhere on the planet. Whether the crisis be Kampuchea in 1979-1980 or Africa in 1984-1986, the attention of the mass media ensures that enough of the world's people and enough of the world's governments are moved to the kind of action which, at the very least, prevents mass deaths.

Forty years ago no such ethic prevailed. In the early 1940s, for example, an estimated 3 million men, women and children starved to death in Calcutta and Bengal while the world knew little and did less.[1]

Such a change is a significant step towards a more truly civilized world. But on its fortieth anniversary,* UNICEF's message to the world is that the time has now come to take the next step.

By far the greatest emergency facing the world's children today is the 'silent emergency' of frequent infection and widespread undernutrition. No 'loud emergency', no famine, no drought, no flood, has ever killed 280,000 children in a week. Yet that is what this silent emergency is now doing – *every week*.

Now, the time has come for governments and peoples to decide that it is just as unacceptable for so many millions of children to die every year of needless malnutrition and infection as it is for them to die in sudden droughts or famines.

That time has come because in the 1980s we have, for the first time, the knowledge and the means to defeat infection and undernutrition among the world's children on a massive scale and at an affordable cost.** And as a dramatic demonstration of that new potential, the lives of over 4 million children have already been saved, *in the last five years alone*, by nations which have mobilized to put today's low-cost solutions into action on the necessary scale. Within the last twelve months the increasing outreach of just two of those low-cost methods – immunization and oral rehydration therapy (ORT)*** – has saved the lives of an estimated 1.5 million children under the age of five (see figs. 1 and 2).

The first half of the 1980s has therefore shown that a revolution in child health is possible, even in the face of the economic recession which still confronts so many nations of the developing world.

The sustained severity of that recession – and its impact on the most vulnerable – is summar-

* The book version of the 1987 *State of the World's Children* report contains a special chapter to commemorate UNICEF's fortieth anniversary. Introduced by Varindra T. Vittachi, Deputy Executive Director of UNICEF, the chapter presents over 30 charts and graphs summarizing the main changes in the world of mothers and children during the last four decades – including a halving of infant and child mortality rates.

** Of the more than 14 million under-five deaths each year, approximately *half* could be readily prevented by implementing the low-cost solutions now available (see pages 24–35).

*** Oral rehydration therapy is an inexpensive method by which parents can prevent or treat the dehydration, caused by diarrhoea, which now kills over 3 million children each year (see pages 35 to 45).

The recession: adjustment with a human face

This year's *State of the World's Children* report documents the dramatic progress of child survival strategies in many nations of the developing world. But in a separate report to be published early in 1987, UNICEF draws attention to an opposing force now affecting the world's children – the continuing economic recession.

Stagnating trade, falling commodity prices, declining aid, mounting debt repayments, and a steep drop in private lending, have stalled economic development in many countries during this decade. Between 1980 and 1985, average incomes fell in 17 out of 23 countries in Latin America and in 24 out of 32 countries in sub-Saharan Africa. Overall, average incomes fell by 9% in Latin America and by 15% in Africa. Only the more dynamic economies of south-east Asia, and the larger, more insulated nations such as India and China, have managed to sustain significant economic progress.

As a result, many nations have faced severe balance-of-payments crises, with import bills and debt repayments heavily outweighing aid, loans, and export earnings. Adding to the strain, government spending has frequently exceeded revenues, leading to unsustainable internal deficits.

When such strains become unsupportable, policy reforms become inevitable. Such reforms have become collectively known as 'adjustment policies'. Their common aim is to reduce huge balance-of-payments deficits, meet essential foreign exchange requirements, maintain vital imports, honour debt repayment schedules, and lay the foundations for renewed economic growth.

After seven lean years, adjustment policies now dominate the economic strategies of many developing nations and are a condition of support from the International Monetary Fund (IMF), to which approximately 70 nations have had to turn for help during the 1980s.

The forthcoming UNICEF study examines such adjustment policies from the point of view of their effect on the poorest families in the developing world. Its overall conclusion is that "the standard of health and education services is declining in many countries" and that "deteriorating health and nutrition is widespread" among the young children of Africa and Latin America.

The report shows that malnutrition, low birthweights, and child deaths are on the increase among the poor of such countries as Barbados, Belize, Bolivia, Brazil, Chile, Jamaica, Philippines, Uruguay and several African nations where years of recession have been exacerbated by years of drought.

Government spending per head on health and education has also declined in half the nations of Africa and Latin America during this decade. The result, in many countries, is schools without books and paper, and clinics without adequate staff or essential supplies.

UNICEF does not question the need for adjustment policies leading to a restoration of economic growth. But UNICEF does question whether it makes either human sense or economic sense to sacrifice the growing minds and bodies of the next generation on the altar of adjustment policy. Arguing for 'adjustment with a human face', the report points out that "policies which undermine a nation's most valuable resources – its human resources – weaken its future economic capacity"

Present adjustment strategies usually include cuts in government expenditure (especially on consumer subsidies such as food); credit restrictions and currency devaluation to cut demand for imports; increased producer prices to stimulate production (especially in agriculture); and the liberalization of imports and privatization of state-owned assets to try to improve economic performance. In sum, deflationary policies predominate.

Inevitably, falling employment and wages, along with rising prices for basic commodities, strike hardest at those who have least scope for making economies and must therefore do without necessities. Similarly, cuts in government spending on health and education have most effect on those who are most dependent on such services – again the poor.

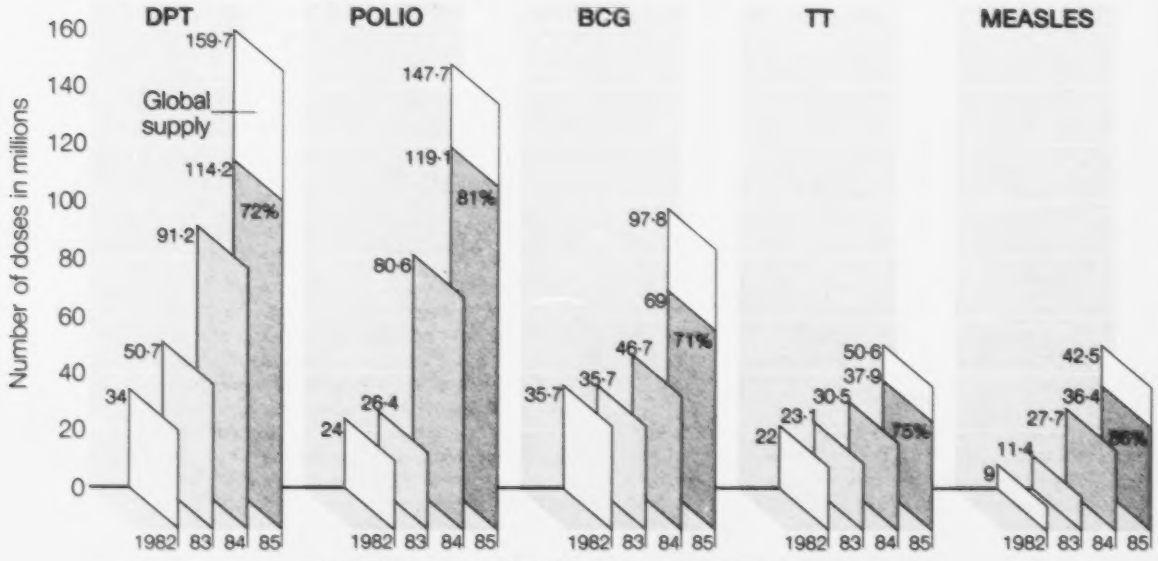
continued over

ized in the first two panels on the left-hand pages of this report. In brief, it is a story of falling incomes and rising hardship for almost half the population of the developing world (fig. 4). But as has happened so often in the past, the very adversity of the present may be the force which breaks the mould of the past and recasts the priorities of the future.* For what we are now seeing, in many nations, is the beginning of a new approach to meeting basic human needs – an approach based on the mobilization of already existing resources to communicate already existing knowledge. Today, knowledge could empower millions of parents to improve their own and their children's lives – even within their limited resources. And today, a new capacity to communicate that knowledge means that it is possible, for the first time, to put it at the disposal of the majority.

Pages 24 to 35 of this report set out in more detail the information and the methods which could lead to a revolution in child survival and child health at a cost which all developing nations can afford to implement and all industrialized nations can afford to support – even in such dark economic times. But the overall message is that the methods themselves are now proven and tested, available and affordable. And

* It has often been the case that a new emphasis on safeguarding minimum levels of human well-being has arisen in times of hardship rather than in times of plenty. In the United States, for example, Roosevelt's 'new deal' arose out of the Great Depression; and in the United Kingdom the rationing system, brought in to help cope with the food shortages of the immediate post-war years, actually resulted in a higher standard of nutrition for the nation as a whole.

Fig. 1 Increase in supply of vaccines by UNICEF, 1982–1985



UNICEF supply 1982–85 (1985 also shows global supply)

DPT - Diphtheria, Pertussis (whooping cough), Tetanus (usually three doses).
Polio - Usually three doses.
BCG - BCG vaccine protects against tuberculosis (one dose only).
TT - Tetanus (two injections in pregnancy to protect against tetanus of the new- born).
Measles - One dose only - as close as possible to 9 months.

Source: UNICEF and WHO estimates.

The recession (cont.) adjustment with a human face

The report is published not to adjust its readers' eyes to the gloom but to light strategic candles in the cathedrals of economic policy. There *are* alternative strategies. But the prerequisite is the commitment of a nation's leadership, and of the international community, to the priority of protecting the poorest at the same time as working to restore economic growth. From that commitment, for example, can flow policies which favour the small farmer and small producer in order to improve employment, productivity, and incomes and nutrition among the very poor. Zimbabwe's recent successes in food production (see panel QQ), for example, are largely a result of investing in the productivity of the poor themselves.

Similarly, such a commitment could also lead to a restructuring of government spending to favour low-cost basic services for the masses rather than high-cost special services for élites.

At this point, alternative adjustment policies interlock with the powerful child protection strategies which have been the main subject of UNICEF's *State of the World's Children* reports in recent years. For a shift in spending to support the mass promotion of low-cost measures such as oral rehydration and immunization, improved weaning and birth spacing, could bring about a significant advance in child protection despite present economic difficulties. The use of today's knowledge – and today's unprecedented capacity to put that knowledge at the disposal of the majority – could therefore be a vital part of 'adjustment with a human face'.

As an example of the scope for this approach, the report points out that the government of the Philippines, in the last year of the Marcos regime, spent approximately five times as much on four sophisticated hospitals as on primary health care services for the whole nation. By contrast, Indonesia has succeeded in increasing spending on immunization even while having to make cuts in overall health spending – mainly by postponing the building of new hospitals.

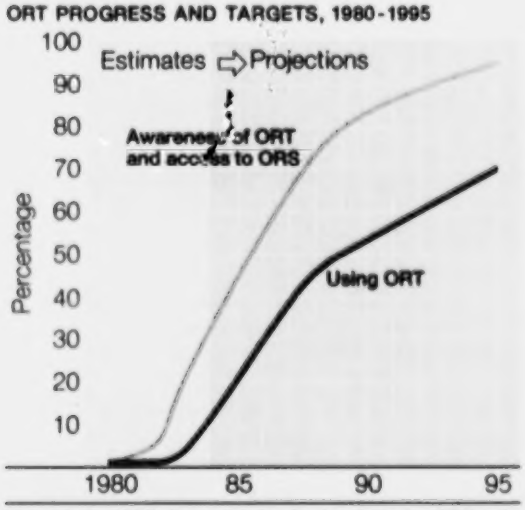
Such alternative adjustment strategies clearly cannot be implemented on a significant scale without the co-operation of the international community. If the inhuman and ultimately uneconomic aspects of adjustment are to be avoided then the short-term stabilization of the economy will have to take second place to the twin priorities of restoring economic growth in the medium and long term and protecting the poorest sections of the community in the process. 'Adjustment with a human face' will therefore require more external finance. Specifically, it would require debt rescheduling, improved aid flows, increased lending, and greater access to the rich world's markets for the poor world's goods.

In other words, a political commitment will also be required from the international community. And in the last twelve months, there has at least been an increasing recognition of the problem by international financial institutions. In July of 1986, for example, the Managing Director of the IMF commented that "it is hard to visualize how a viable external position can be achieved if large segments of the work force lack the vocational skills – or, even worse, the basic nutritional and health standards – to produce goods that are competitive in world markets. Human capital is, after all, the most important factor of production in developing and industrial countries alike".

"No adjustment policy," concludes the report, "is acceptable which allows children to be sacrificed for the sake of financial stability. Yet this has happened, and it need not happen. Alternatives exist. What is needed now is to convince decision makers at all levels – both in national governments and international institutions – to take appropriate action quickly. Many children will die, and many of the survivors suffer permanent damage, because of failure to act now."

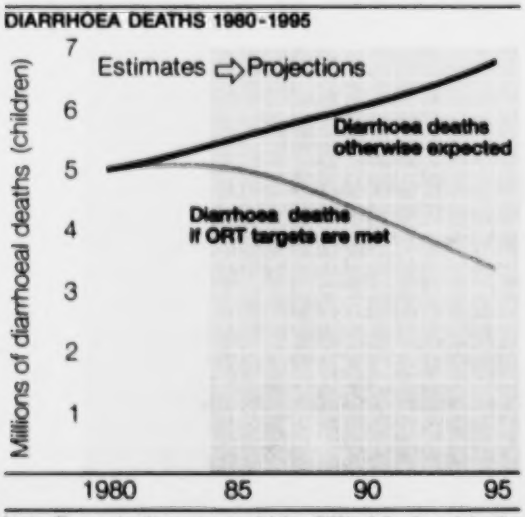
The UNICEF special study, 'Adjustment with a human face', will be available in early 1987. For details please write to UNICEF, Division of Information and Public Affairs, UNICEF House, 3 UN Plaza, New York, NY 10017, USA.

Fig. 2 ORT use and diarrhoea deaths, estimates and projections, 1980–1995



Note: Up to 1983, the estimates for 'use' are for ORS only. After that date, estimates of use also include other effective oral rehydration solutions including those made from household ingredients such as sugar and salt.

Source: Diarrhoeal Diseases Control Programme, Fifth Programme Report, WHO, Geneva, March 1986.



Note: The projections assume (a) that 67% of diarrhoeal deaths are susceptible to prevention by ORT and (b) that 80% of those using ORT will use it effectively and that this figure will increase to 100% by 1995.

Source: Diarrhoeal Diseases Control Programme, WHO, Geneva.

it is clear that ten years from now, by the *fiftieth* anniversary of UNICEF, a combination of such methods could succeed in reducing child death rates by at least half (fig. 3).

But it is also clear that this will only happen if the world's prevailing morality keeps pace with its changing capacity. At the moment, it is still accepted as *normal* for more than 14 million of the world's young children to die every year and for millions more to live on in malnutrition and ill health – despite the fact that recent technical and social advances have rendered hollow the inevitability on which that acceptance is based.

It is now time for morality to catch up with capacity, for a sea-change in public and political perception, a change to redraw the line of what is acceptable in our times, a change which will demand that today's knowledge be put at the service of all mankind, a change which will make it unconscionable not to do what can now be done.

A new ethic

The founding of UNICEF itself signalled the beginning of such a change. Established in 1946 as part of the first world-wide effort to alleviate the consequences of a major international disaster – World War II – UNICEF was a statement by the international community that a new ethic was necessary, an assertion that the world's children ought to be protected in times of emergency and disaster – no matter what the folly of their elders.

Today, that ethic is largely accepted – as the massive world-wide public and political response to the African emergency has amply demonstrated. But as UNICEF uses the occasion of its fortieth anniversary to look forward to the next decade, it is clear that the greatest need is for an equivalent change in global morality – a change which will make the silent emergency equally unacceptable to the majority of the world's people.

That change would surely be accelerated if the world could *see* this silent emergency in the same way that the mass media have enabled it to *see* the loud emergency of Africa or Kampuchea. But

Egypt: defeating dehydration

As the result of what the *British Medical Journal* says may be "the world's most successful health programme", over 75% of Egyptian mothers are now using oral rehydration salts (ORS) to treat their children with diarrhoea.

Only three years ago the dehydration of diarrhoea was Egypt's leading killer of young children, causing the death of some 130,000 under-twos every year. Though ORS was available at government health centres and private pharmacies, few doctors prescribed the remedy. Fewer than 2% of Egyptian mothers had even heard of it, and fewer than 1% had used it.

The tide began to turn in January 1983, when the National Control of Diarrhoeal Diseases Project started work on a new approach in Alexandria governorate, with the backing of the United States Agency for International Development. The ORS packets were scaled down to 5.5 grammes to fit a common size of drinking glass; different logos and 'brand' names were tried out; a plastic cup and spoon were designed to ensure reliable measuring; and campaign messages stressing the importance of continued feeding during diarrhoea were tested on mothers with children under three.

The new product was launched nation-wide in February 1984 with an intensive mass media campaign using posters, billboards, newspapers, magazines and radio together with television, which reaches 90% of Egyptians. A series of television spots starring a popular actress was screened at peak viewing times. In summer, at the height of the diarrhoea season, the spots were shown six times a day.

The impact was immediate. In a survey less than two years after the campaign began, 80% of mothers said they had learned of the remedy through television; 66% had also been briefed by a doctor or health worker. The campaign logo of a mother giving her child ORS with a spoon quickly became the most widely recognized advertisement in Egypt.

The manufacturer could barely keep pace with the demand. Egypt now produces enough ORS to make up 15 million litres of solution a year, and over 5 million cups and spoons have been given out or sold. Three out of five ORS sachets are sold in pharmacies, even though the identical product can be obtained free at government health clinics.

More important still, within two years 96% of mothers with young children had heard of ORS: 82% said they used it when their child had diarrhoea, and 97% of these could mix it correctly. Two out of three said they continued feeding their child during the episode.

But this transformation was not achieved by the mass media alone. Health professionals have played a key role in lending credibility to the treatment, though many doctors still prescribe ineffective drug treatment as well. More than 13,600 doctors and nurses have been trained in oral rehydration, and it has now become part of the curriculum of various medical schools. By September 1985, 77% of hospitals and health clinics had set aside a space where mothers are taught to administer ORS to their child, and where they and health workers can see for themselves how effectively the treatment works.

To popularize ORS in remote rural areas, the Ministry of Health ran an experiment in 213 villages with a population of nearly 800,000, where 564 community members were given ORS supplies and brief training. Over a four-month period these 'depot holders' provided ORS and nutritional advice for 28,000 children with diarrhoea; the more dehydrated children were referred to the nearest health centre. Depot holders are now being trained in four more governorates.

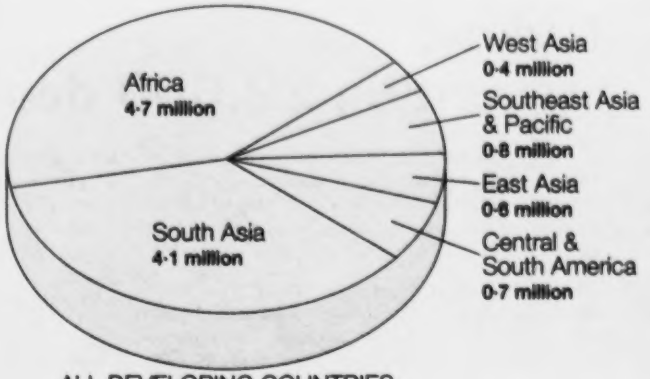
Egypt now leads the world in promoting oral rehydration. And encouraged by this success, the government has now committed itself to immunizing almost every child by July 1987 – the thirty-fifth anniversary of the Egyptian revolution.

Fig. 3 Children's lives saved by year 2000 if child survival targets are met

By promoting today's knowledge of low-cost child health, UNICEF believes it is possible to achieve, by the end of this century, the following targets in child survival:

- A reduction in under-five mortality rates (U5MR*) to 70 or less in all countries
- A 50% reduction in all countries where the U5MR is currently between 70 and 140
- A reduction of U5MR to 35 or less in all countries where U5MR is currently 70 or less

The pie chart shows the number of children's lives which will be saved - every year - if these child survival targets are achieved.



Note: * Under five mortality rate (U5MR) is the number of deaths before the age of five, per 1,000 live births.

the silent emergency is also an invisible emergency. Almost without notice, more than fourteen million children are now dying every year. They are dying in the final coma of dehydration; dying in the extremities of respiratory infections; dying in the grip of tetanus spasms; dying in the distress of measles; dying in the long-drawn-out process of frequent 'ordinary' illnesses which steadily weaken and malnourish the body until it has nothing left to fight the next cold, or the next fever, or the next bout of diarrhoea.

This is the emergency which, even in the last two years, has meant that more children have died in India and Pakistan than in all 46 nations of Africa put together.* And this is the emergency which has meant that, in 1986, more children have died in Bangladesh than in Ethiopia, more in Mexico than in the Sudan, more in Indonesia than in all eight drought-stricken countries of the Sahel.**

It makes no moral difference that these millions of children did not die in any one particular place at any one particular time. But it does mean that their suffering cannot be framed in the viewfinder of a camera. And it does mean that their deaths are therefore not news, and that the world is not shamed into action on their behalf. Yet these victims of the silent emergency are just as dead. And the love and the hopes of their families are just as surely turned to grief.

* Southern Asia, with the largest child population and the largest number of child deaths of any region in the developing world, is now accelerating its social development programmes - on a very significant scale - with plans to use today's knowledge to bring about a significant improvement in the health of the region's children (see panels 12, 25, 22 and 14). In particular, the newly formed South Asian Association for Regional Co-operation (SAARC) has put co-operation for child survival and development high on its political agenda. In late October 1986, just after this report goes to press, a major SAARC conference, held in co-operation with UNICEF, will exchange plans and experiences and discuss the region's efforts to bring basic services within reach of all the region's children and to promote both universal immunization by 1990 and universal knowledge about diarrhoea management (including knowledge of ORT). Co-operation for child health and survival will thereafter be reviewed annually at high-level meetings of the SAARC nations. The seven nations of SAARC are Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

** Absolute numbers of child deaths are here being compared in nations of different population sizes. This is a valid comparison inasmuch as absolute numbers represent the deaths of individual children. But even the proportion of children who die before the age of five is almost as high in southern Asia as in Africa.

Turkey: preventing 22,000 deaths

A highly successful vaccination campaign in 1985 not only means that Turkey could achieve universal child immunization within two years but has opened the way for other measures to drive down the nation's high child mortality.

Some experts doubted that the immunization drive could meet its goal: with a national health staff of only 12,000 and limited funds, the organizers were proposing to reach more than 40,000 widely scattered communities and immunize 80% of the nation's unvaccinated children against five diseases.

But the campaign – conducted in three ten-day stages in September, October and November – reached its target of just over 4 million under-fives. Working from 45,000 temporary vaccination posts, most of them set up in schools, the teams gave 26 million vaccinations: 55% of the nation's young children have now had all of the seven doses needed for full protection. The World Health Organization has calculated that the campaign prevented more than 2 million infections and over 22,000 child deaths.

The campaign succeeded because it was backed at the highest level: President and Prime Minister, provincial governors and district prefects all threw their support behind it.

Then, while the vaccinators were being trained and the vaccine supplies readied, a mass-media campaign took on the task of informing parents about the value of vaccination. The national radio and television networks began broadcasting announcements and jingles three months before the launch; overall, the television network donated $5 million worth of free air time. Posters and billboards went up by the roadsides, and newspapers carried almost daily coverage. The postal services franked every piece of mail with a message on immunization.

Village leaders, imams and schoolteachers – respected figures in Turkish communities – lent their authority to the drive. Village leaders and imams visited house to house to encourage families to bring their children for vaccination. Some 70,000 primary-school teachers – a third of the national total – reported back early from their summer break to help with the campaign. On the Friday before the launch, the imams preached the call to immunization from every one of Turkey's 54,000 mosques.

As well as saving lives, the campaign has strengthened the health services for the long term. Health workers have improved their skills in everything from vaccine administration to community outreach, and tens of thousands of families have come onto health centre rolls.

Turkey has now set its sights on diarrhoeal dehydration and respiratory infections, which together cause more than half the deaths of young children.

Respiratory infections will come later, but in the meantime, a national programme was launched in April 1986 to inform parents about diarrhoeal dehydration and encourage them to forestall it with oral rehydration salts and home remedies like *ayran* (a traditional yoghurt drink).

Thirty rehydration centres opened between March and June 1986, and there will be a centre in every children's hospital by the end of 1987. Television films and spots to publicize the treatment are reaching 85% of the population, and the message is being reinforced by radio, posters and the national press. For the second year running, graphic artists, composers, voluntary agencies and private individuals have given their services free of charge.

Nine million packets of oral rehydration salts have already been distributed to health centres; the salts will also be going to teachers, village heads and imams when they have been trained in dispensing them. By 1987, when the programme becomes fully operational and demand is expected to total 12 million packets a year, the salts will also be available from local shops and coffee-houses.

Social organization

In the past, it was possible to argue that there was little point in focusing attention on this wider tragedy because there was little to be done about it, except to wait for economic development to take its slow and uncertain course. In other words, everyday malnutrition and illness on this scale has been regarded as acceptable because it has been perceived as inevitable. Today, that perception is simply out of date. Today, improvements in knowledge, and in the social organization to put that knowledge to use, are bringing the invisible tragedy of the world's children out from the cold of the inevitable and into the domain of the preventable. They are therefore rendering the silent emergency as unacceptable as the loud.

That is why this report is based on an appeal for a widening of the angle of our concern, an appeal for public and political opinion worldwide to catch up with this new circumstance, an appeal to the media to find new ways of promoting awareness of this invisible emergency, and an appeal for a new prevailing opinion which will react to needless malnutrition and disease – wherever it may be – in the same way as it now reacts to the suffering of children in the more sudden and specific disasters of our times.

Such a change in ethos is fundamental to the 'state of the world's children' in the remaining years of this century. For changes in prevailing opinion and attitude are the moral context for changes in the world of events, the climate in which ideas and movements flourish or perish. At different times in the past, for example, prevailing opinion has accepted the evils of slavery and colonialism, racism and apartheid; but changes in that climate of opinion have eventually deprived such ideas of the oxygen of tolerance, the sustenance of acceptance.

Surely, on this fortieth anniversary of UNICEF, the time has come for the international community to say that it is *also* intolerable for 40,000 of its young children to die every day, and for millions more to be malnourished, blinded, brain-damaged and disabled in the silent emergency of infection and malnutrition which the world has already demonstrated its capacity to prevent on a significant scale and at a manageable cost.

Surely the time has come to say that it is obscene to let this continue day after day, year after year, as our civilization moves into the twenty-first century. Surely the time has come to put the mass deaths of children alongside slavery, racism, and apartheid on the shelf reserved for those things which are simply no longer acceptable to mankind. Surely the time has come to mobilize national and international capacity to put known low-cost measures into effect on the necessary scale, to exert the moral muscle to transform what *can* now be done into what *will* now be done.

Of course there are a thousand practical problems to be overcome, and of course it will not be easy to put even known solutions into practice on such a scale. But let us rather compare those practical problems with the difficulties mankind has overcome in so many other fields in recent times. Can we really say that it is too difficult? Can we really say that we must wait for the return of economic growth when over 3 million children a year are dying of diarrhoeal dehydration* which can be prevented by basic family health education and by oral therapies costing less than one dollar? And can we really say that it is too expensive, that 'we must wait for economic development', when 3.5 million children a year are dying of diseases which can be prevented by immunization at an additional yearly cost which is less than the price of five advanced fighter planes?

We now have the knowledge. We now have the means. And if political and public opinion in the world were to burn with intolerance of readily preventable disease and malnutrition, then who would really deny that these evils could be brought to an end in our times?

* Approximately 5 million children are killed each year by diarrhoeal diseases. Some 70% of these deaths are caused by dehydration, which can be prevented in almost all cases by ORT.

Population: fewer deaths, fewer births

For the last four years, UNICEF has been bringing together the experience of many nations in order to articulate the present potential for a 'child survival revolution' which could save the lives of at least half the more than 14 million under-fives who are now dying each year.

Amid the enthusiastic world-wide response to this new potential, there has often been heard an undertone of anxiety about whether the saving of so many lives would exacerbate the population problem.

The links between death rates and birth rates are many and complex. But the bottom line is that there has never been a significant and sustained fall in birth rates which has not been preceded by a significant and sustained fall in child death rates.

One reason is that when parents become more confident that their children will survive, they tend to have only the number of children they actually want, rather than 'compensating' for likely deaths by extra births. Another related reason is that the parents of a child who dies in infancy tend to have another child sooner than they would otherwise have done – again increasing the birth rate.

More directly, several of the most powerful methods now available for improving the health and saving the lives of children are also among the most powerful methods for reducing birth rates.

Promoting breast-feeding, for example, is one of the most effective low-cost ways of increasing the survival chances of infants in poor communities. At the same time, the hormonal changes produced in the mother's body by the act of breast-feeding also have a contraceptive effect. Although not totally dependable from an individual mother's point of view, breast-feeding still prevents more conceptions than family planning programmes.

Similarly, the promotion of the knowledge and the means to space pregnancies is a powerful way of reducing both deaths and births. It is now known, for example, that leaving a space of at least two years between births can halve the risk of child deaths. Other ways of empowering women – for example, through literacy or informal education programmes – have also been found to be strongly associated with both lower death rates and lower birth rates.

More generally, the empowering of mothers with today's knowledge about ways and means of improving their children's health can generate the confidence – the feeling of having control over their own life – which is at the heart of the population question and the acceptance of family planning. In this sense life-saving techniques involving parental action – such as oral rehydration therapy and ensuring a full course of immunizations – can be linked directly to attitudes more conducive to smaller families. As the Director-General of the World Health Organization has said, "This curative action ... can give her confidence that her child will survive. And it convinces her that she can take action to stop herself from having more."

Finally, there is the dramatic evidence of those countries which can be said to have already brought about a 'child survival revolution'. Countries such as Sri Lanka, China, Costa Rica, the Republic of Korea, and Thailand, for example, have already reduced child deaths to low levels. But this achievement has eventually contributed towards some of the lowest birth rates in the developing world. So much so, that if all developing countries were to achieve the same child death rate and the same birth rate as the average for these five countries, then there would have been 9 million fewer child deaths in the world this year – and nearly 22 million fewer births.

The next ten years

In some degree, every individual and organization is a creative element in that climate of opinion, and the responsibility for this achievement is therefore the responsibility of all. But to change that perception, we must first climb out of the rut of acceptance and see a vision of the future which more truly reflects the possibilities of the present.

From the experience of the last five years of working with governments throughout the developing world, UNICEF can confidently say – as it could not have said five years ago – that if governments and peoples will mobilize to promote and support today's low-cost ways of empowering parents to protect child health, then the decade ahead could be one of new hope for the world's children:-

Within a decade, the majority of the world's children can be freed from high death rates and from frequent growth-sapping disease.

Within a decade, the majority of the world's parents can be empowered with a degree of 'death control' which will in turn help to bring about new attitudes towards birth control (see panel 5).

Within a decade, large numbers of children dying from dehydration or measles, or being malnourished or crippled or blinded from a lack of basic health care, should be regarded not as normal and inevitable but as scandalous and shameful.

Within a decade, one of the greatest ideals of civilization – basic protection for the lives and the normal mental and physical growth of the world's children – can be achieved.

No-one could deny that limits are – and will be – imposed by poverty. But even within those limits a new era in child health can now begin. And by protecting the lives and growth of those millions of young children, a major long-term contribution can now be made towards the war on poverty and the slowing down of population growth in the remaining years of this century. For as UNICEF argued when it accepted the Nobel Peace Prize in 1965, and as the more successful developing countries have since demonstrated in practice, there will always be a profound relationship between the mental and physical development of children and the social and economic development of their societies.

Social mobilization

An overall blueprint for this new era in human health has emerged from the recent experience of many nations and was given its fullest statement at the 1978 International Conference on Primary Health Care at Alma Ata in the Soviet Union. From that experience, UNICEF and the World Health Organization (WHO) concluded that 'health for all by the year 2000' could be achieved by the route of primary health care. Now, in relation to children, many countries are beginning to show that this ideal is within reach.

As an achievable first step, at a time when resources are scarce, many nations are looking to the knowledge and low-cost techniques which have now demonstrated so convincingly that they are capable of bringing about a revolution in child survival and development. Chief among those methods is immunization which, in the 1980s, has extended its outreach in the developing world to the point where it is now saving the lives of approximately 1 million children a year. Of potentially equal importance is oral rehydration therapy (ORT) which, from small beginnings in the early 1980s, is estimated to have saved the lives of approximately half a million children in 1986. Other advances in knowledge – knowledge about such basic things as the feeding and weaning of children, about the prevention and treatment of the most common illnesses, about birth spacing and pre-natal care – can also now make great inroads, at very low cost, into the deaths and disabilities caused by infection and undernutrition (pages 24–35).

But if we have learned anything over these last four decades, it is that there is no automatic process which translates technical advances into widespread improvements in the lives of the majority. Only conscious policies, backed by political commitment and the mobilization of the

necessary social and economic resources, can translate this new potential into a new reality for the world's children.

The real challenge is therefore no longer scientific or technical. It is political and social. It is the challenge of generating the political will and the social organization to put today's knowledge to use on the necessary scale and at an affordable cost. And it is here that the most important breakthroughs of all are now beginning to be made.

For what makes it possible to put today's solutions into effect is the recent transformation of the developing world's capacity to communicate with, and to support, the vast majority of its own people. Over the last twenty years, a communications revolution has put radios in a majority of homes, televisions in a majority of villages, schools in a majority of communities, and given developing societies a communications capacity immeasurably greater than that available to industrialized nations at a comparable stage of their own development.

The majority of developing nations have now built up this infrastructure of communications and support capacity to the point where it is one of the most powerful weapons in the development armoury. And it is this social breakthrough – in the millions of community health workers who have been trained, in the development of transport and communication, in the rise of mass media and mass education, in the fact that a majority of young mothers in almost every country can now read, in the expansion of government services, in the growth of thousands of voluntary movements, and in the increasing numbers of people's organizations of all kinds – which now makes it possible to put today's low-cost scientific breakthroughs into action on an unprecedented scale.

This is the new potential which many nations are now beginning to exploit: Turkey and Colombia, India and Sri Lanka, Nigeria and Burkina Faso, Egypt and Algeria, Ecuador and Peru, Bolivia and the Dominican Republic, Indonesia and Thailand, are all pioneering new strategies based on this new capacity to communicate knowledge to their peoples and to support them in using that knowledge to improve their own lives.

In so doing, such nations are also declaring that what is needed is a concerted rather than a sectoral attack on major social problems. They are showing that health, for example, is not the responsibility of health ministries or doctors alone, but of society as a whole. Using today's knowledge to attack priority health problems is therefore a goal for the whole of society to strive towards, using not just its formal health services but its education systems and its national religions, its radio and television services, its mass-circulation newspapers and its traditional media, its religious organizations and its voluntary movements, its local community organizations and all branches of national and local government – as well as the expertise and leadership of all levels of the health services themselves.

The panels on the left-hand pages of this report describe some of the recent examples of this new approach. Each nation's methods are unique to its own culture and circumstance. But their common strand is the forging of alliances between the professional health services and a wide range of other institutions whose capacity to regularly reach the majority of the population is much greater than that of the health services acting alone. And their common lesson is that significant improvements in child health can now be brought about if a society is prepared to mobilize all its resources in order to put today's knowledge at the disposal of today's parents.

A new attack on poverty

For UNICEF, the sense that the world can now enter upon a new era in child health is part of a long history of involvement with the rights and needs of the world's children. The first phase of that history was the organization's involvement, as part of a massive relief operation, in helping to protect the children, mainly European, who were victims of World War II. This was the 'loud emergency' which gave birth to UNICEF and defined its early role.

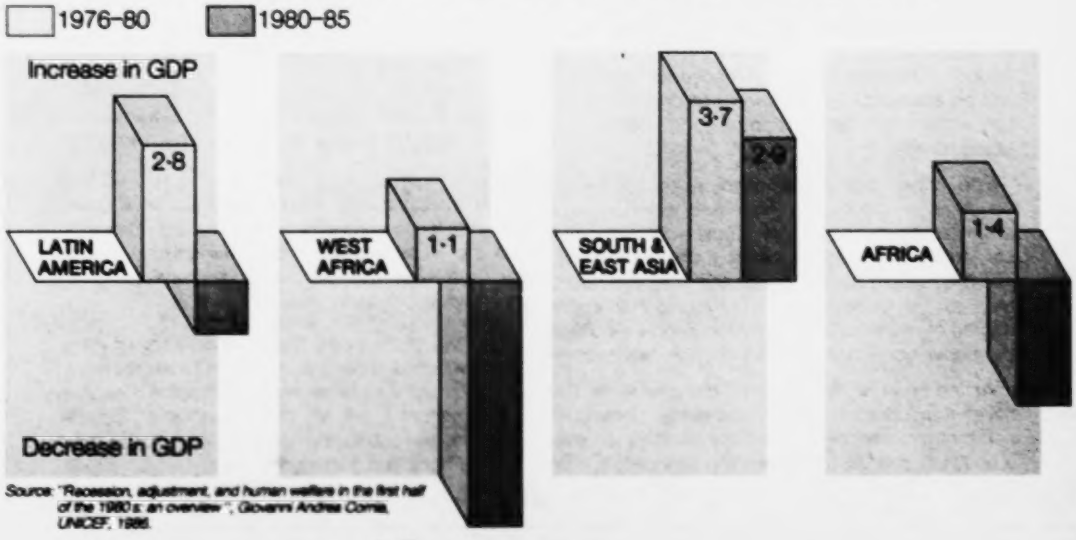
But at the same time as much of Europe was being reconstructed with the aid of the Marshall Plan, much of Asia was emerging into independence and much of Africa was readying itself for the drive to decolonize. And as awareness of poverty in the wider world began to gain ground, it was decided that UNICEF should continue its operations and that its mandate should be extended to helping children wherever in the world the need was to be found.

The second phase, the period from 1950 to 1980, therefore saw UNICEF working with an ever-increasing number of governments in the developing world on programmes of maternal and child health services, disease control, improved nutrition, clean water, safe sanitation, low-cost housing, and primary education.

Towards the end of this period, UNICEF began to draw on its by then considerable experience in over 100 countries to enter the arena of advocacy – helping to formulate and promote ideas and strategies such as basic services, appropriate technology and primary health care – ideas which would contribute, on a larger scale, towards the translation of economic progress into improvements in the quality of life for the majority. It was a period which culminated in the International Conference on Primary Health Care in Alma Ata and in the International Year of the Child (1979), during which UNICEF co-ordinated a world-wide programme to raise awareness of the problems facing the world's children – including the children of the industrialized world.

But by and large, these three decades were a period of spectacular progress for children: between 1950 and 1980 child death rates fell by 50%; average life expectancy rose by 30%; food production trebled, and school enrolment rates doubled.

Fig. 4 Changes in GDP per capita, 1976–1980 and 1980–1985 (developing regions)



Source: "Recession, adjustment, and human welfare in the first half of the 1980's: an overview", Giovanni Andrea Cornia, UNICEF, 1986.

Central America: a bridge to peace

In spite of political rifts and economic crises, the seven governments of Central America and Panama have joined forces to confront a common enemy. On 24 March 1986, at a quiet meeting in San Salvador, the region's health ministers signed an unprecedented agreement to collaborate in protecting the survival and development of the children in the region.

The aim is to halve the region's infant and child mortality, saving the lives of some 50,000 children a year in Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. The Pan American Health Organization (PAHO) and UNICEF are backing the programme. Funding of $15 million from the Italian government came through soon after the agreement was signed; and the European Economic Community is considering a matching grant.

The child survival pact is one part of a seven-point plan launched in 1984 by PAHO and the Central American health ministers under the banner "Health: a bridge for peace in Central America". The goals range from strengthening the region's health services to improving nutrition and installing clean water supplies. The World Health Assembly approved the plan in May 1984. By August 1986, $236 million had been promised and an additional $400 million was under negotiation with various donor countries and international organizations.

The needs are great, even in the better-off countries of the region. War and violence have driven an estimated million people across national borders or to makeshift shelter in their own lands. Infant and child deaths are on the rise, and nearly two out of three of the survivors suffer some degree of malnutrition. Ten million people – 40% of the population – lack access to health services.

At the heart of the regional programme lies the belief that concern for the well-being of children and mothers transcends ideology and can serve as a bridge to mutual understanding and peace.

The evidence that this is not an impossible dream has come from El Salvador over the past two years. On three national immunization days each year the government and opposition forces have laid down their arms, in an informal cease-fire mediated by the Catholic Church, so that children could be vaccinated against five diseases.

Every political party in El Salvador has now thrown its backing behind the campaign to improve the chances of survival of the nation's children. At a special session in April 1986, El Salvador's Congress passed a decree reserving the second Sunday of April each year as an official vaccination day.

And there are increasing signs that the commitment to children's health crosses national frontiers as well:-

- Just before the Honduras campaign for child survival on 25 April 1986, the Ministry of Health found it was running out of tetanus toxoid; the government of Nicaragua immediately rushed 100,000 doses of the vaccine across the border.
- The government of Honduras has supplied some 200,000 packets of oral rehydration salts to help Guatemala prevent diarrhoeal dehydration among children in rural areas. Honduras provided another 50,000 packets when El Salvador ran short, and Nicaragua has done the same for Panama.
- Technical teams from Guatemala have taken part in the national vaccination days in El Salvador and the 'people's health day' immunization campaigns in Nicaragua, partly as an apprenticeship for their own vaccination drive this year.

For two years now, the co-ordinators of each country's child survival programme have met regularly to share their experiences and plans. Peace is still a distant hope for the countries of Central America; but a beginning has been made in their alliance against a common enemy.

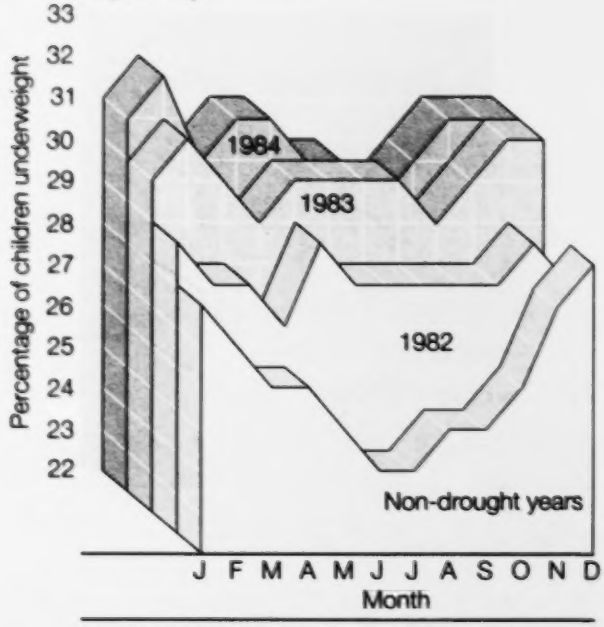
Such advances were made possible, in the main, by overall development and economic growth. But then, with the 1980s, came economic recession.

In this decade, more than half the nations of Africa have seen their average real incomes fall by more than 15%. In Latin America, average earnings today are 9% lower than in 1980. In the developing world as a whole, 1986 has been the seventh consecutive year of negative or negligible growth in incomes. Only in the larger or more dynamic economies of south and east Asia has the momentum of economic development been maintained (fig. 4).

The brunt of this blow has been borne by the poor. The nearer the breadline, the less the scope for economies. And for the poorest people, declining employment, falling wage levels, and cut-backs in government spending on social services have often meant going without necessities – food, clothing, health care, shelter. The result, in many developing nations, is a decline in the nutritional health of many of the world's most vulnerable children (see figs. 5 and 6).

Fig. 5 Prevalence of underweight children, Botswana, 1979–1984

National rates (percentage of children below 80% of standard weight-for-age)



Source: National Nutrition Surveillance Programme, Botswana, 1985.

After three decades of unprecedented progress, the momentum of economic development is therefore being lost in our times.

But in UNICEF's view, the present slowdown in economic growth does not automatically mean that the momentum of social development must also subside. Three decades of progress have created a knowledge and a capacity – especially in the fields of communication and social organization – which have yet to be seriously and systematically exploited for the improvement of health and well-being among the majority. And in the next few years, it is the exploitation of this existing capacity which must maintain the momentum of improvement in the quality of human life.

The promotion of universal immunization and universal knowledge about ORT, for example, could have the effect of saving perhaps as many as 7 million young lives each year – an unquestionable advance in the human condition. Yet it is not the restoration of economic growth or the creation of new capacity – necessary as these are – which will bring that change about. It is rather the mobilization of the political will and the social resources to take full advantage of existing capacity.

But before reporting on the ideas and the action in the struggle to use that capacity, the immediate dangers of the recession must be taken into account.

The human dimension

As many developing nations adopt 'adjustment policies' to try to cope with recession, a special supplement to this year's report develops the argument that such adjustment policies should be deliberately designed to take into account the need to protect the children of the poorest and most vulnerable sections of society. As UNICEF's Richard Jolly has written:-

"Such a broader approach to adjustment is not only a matter of human welfare. To miss out the human dimension of adjustment is an economic error of the most fundamental sort. Much evidence already exists of the economic returns to investment in human resources. To fail to protect young children at the critical stages of their growth and development is to wreak lasting damage on a whole generation, the results of which may well have effects on economic development and welfare for decades ahead.

"If the purpose of adjustment policy is to lay the foundation for sustained growth in the economy over the longer term, it is senseless to ignore the most basic needs of the population in the process. Yet if nutrition standards fall or basic health and basic education services are cut back, this is precisely what is being done.

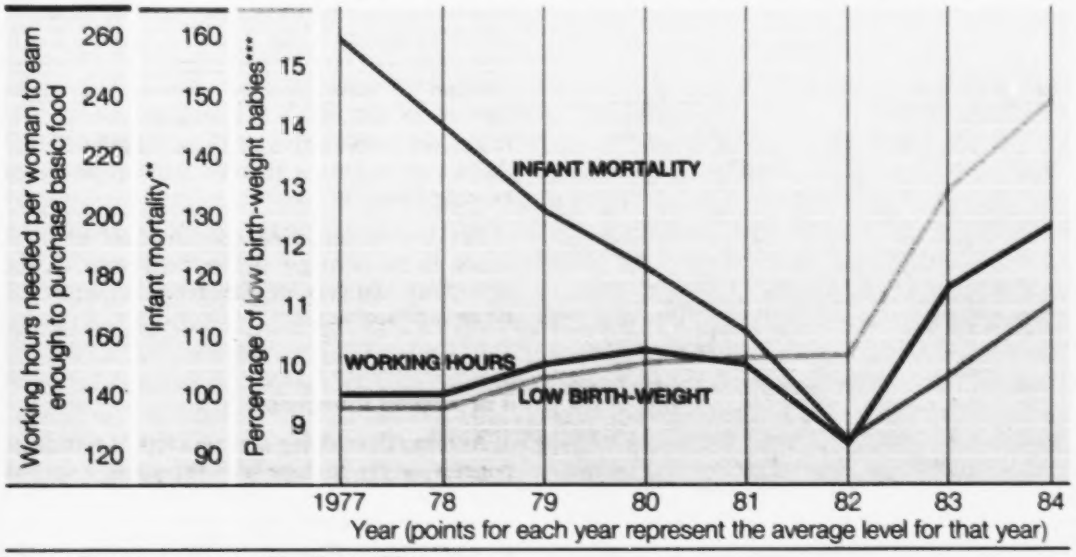
"How many of us would countenance rising malnutrition among our own children – without taking or demanding drastic and urgent remedial action? How many of us would be willing to accept for our own families a period of austerity so severe as to cause rising malnutrition among our children – even with some assurance that we should not worry because in five or ten years reasonable nutritional levels will return? If our personal answers are so clear, can we not work together in an urgent search for alternatives, internationally and nationally?"[1]

There are alternatives, and they are discussed more fully in the supplementary chapter to this report.

Must we starve our children?

Some of these changes are already within the power of the developing nations. Julius Nyerere's question – "*Must we starve our children to pay our debts?*"[1] – is real rather than rhetorical for many nations today; but as Pakistan's Finance

Fig. 6 Recession, low birth-weight and infant death, north east Brazil, 1977–1984*



Notes: * Population covered = 38 million in 1984.
** Infant mortality = deaths before the age of one per 1,000 live births.
*** Low birth-weight = below 2,500 grammes.

Source: R A Becker, A Lechtig, "Brazil: Evolucao da Mortalidade Infantil no periodo 1977-84", Ministry of Health, Documentation Center, Brasilia, DF, Brazil, 1986.

Minister, Mahbub-ul-Haq, told the annual meeting of the International Monetary Fund and World Bank in Seoul last year:-

"*There are other equally legitimate questions. For instance, must we starve our children to raise our defence expenditures? For the sad fact is that from 1972 to 1982, the `health and education expenditures of the low-income developing countries went down ... while, at the same time, the defence spending of the developing world rose from $7 billion to over $100 billion. When our children cry in the middle of the night, shall we give them weapons instead of milk?*

"*And let us also ask: must we spend a good part of our development budgets to provide facilities for the rich and the privileged? For I discovered from my own experience that it took only the postponement of one expensive urban hospital to finance the entire cost of an accelerated immunization and health care programme for all our children. Is it not our own responsibility to correct our distorted priorities and prices before making fervent appeals for the correction of international irrationalities?*"[2]

Some nations are already taking that task seriously. In Indonesia, for example, sharply falling oil revenues have meant cuts in government spending – including spending on health. But so far, the cuts have been made in the hospital construction programme; spending on the drive towards universal immunization, and on the village-based *posyandu* health posts, has actually been increased. Similarly, Algeria is increasing its spending on basic preventive health care even though overall health budgets have been eaten into by recession and falling commodity prices (see panel 7).

But the fact of the matter is that many of the developing nations will only be able to switch substantial resources to the protection of the poorest if there is also some increase in the absolute size of those resources. And that can only be achieved by a parallel commitment from the industrialized nations; by an increase in official aid and low-interest loans; by agreements on fairer and more stable prices for the third world's principal commodity exports; by fewer restrictions on the export of manufactured goods from the poorer developing nations; and by a relaxation of debt repayment schedules (and in much of sub-Saharan Africa, a moratorium on repayments for the next decade).

Such actions by industrialized nations are as essential for the protection of the poorest as anything the developing world itself can do. And to dismiss them as idealistic is to admit that idealism has gone into a severe recession of its own. Official aid to all developing countries, for example, now totals only 0.36% of the industrialized world's GNP, and it is difficult to take seriously the plea that the industrialized nations – on average 60% richer than they were twenty years ago – can afford a smaller share of their wealth now than they could then.

Social targets

As the supplement to this year's report also argues, an essential part of any policy designed to meet the minimum needs of the poorest sections of society must be some method of monitoring whether or not that policy is in fact achieving that aim. Throughout the 1980s, governments and economic institutions have produced a confetti of statistics about declining GNPs, rising inflation rates, and deteriorations in the balance of payments. Yet we have very few facts and figures about the human consequences of such trends – about household food supplies, or changes in the percentage of people living below the poverty line, or increases in the numbers of children who are undernourished.

Whether in good times or in bad, it is therefore necessary to monitor what is happening to human development as well as economic development. And it is UNICEF's hope that social indicators such as the under-five death rate, the proportion of a nation's children who are growing normally, literacy levels, immunization coverage, and the availability of clean water, sanitation and primary health care, will be given increasing importance in the years immediately ahead. At the same time, it is also important to monitor the rate at which developing countries are reducing the disparity between their own

Algeria: halving child deaths

Algeria has launched a new national programme which aims to halve infant and child mortality before the decade ends.

The North African nation of 22 million people has made rapid economic progress since independence in 1962. Per capita income now averages more than $2,400 a year, placing it in the upper middle-income bracket. Infant mortality has been halved, 90% of the population has access to health care, and over 50% of births take place in health centres or hospital.

But progress began to falter about six years ago. Measles alone was still killing 10,000 children under five every year. Although Algeria's health services formally adopted oral rehydration therapy in 1971, diarrhoeal dehydration still caused up to 30,000 child deaths a year. And one child in ten still died before the age of five.

In mid-1984 the Algerian government looked at the facts – and decided that the toll of children's deaths was unacceptable. "We cannot wait until everything is in place," said the Minister of Health. "There are lives to be saved, and we have to act fast."

Action began with a mass media campaign during the summer of 1984, at the height of the diarrhoea season. Television spots promoting oral rehydration were screened four times a day at peak viewing times and were seen by over 80% of Algerian families. National newspapers and radio channels ran features, news stories and editorials on diarrhoea. Posters and brochures were distributed through health centres, government offices, schools and community organizations. To meet the growing public demand, all health centres were supplied with oral rehydration salts and health personnel trained in their use.

In November 1985, a six-day 'catch-up' campaign raised the measles vaccination rate from 40% to 70% of children under four. Over 12,000 health workers immunized 1.2 million children at 6,840 vaccination posts, many of them set up in schools, village halls and private homes.

All means of communication were used to motivate parents to bring their children for vaccination. Children brought letters home from school to read out to their parents. Village and town criers spread the message through the market-places and streets. Religious leaders gave out information at the end of their Friday sermon in the mosques. Members of the national women's and youth movements made home visits to their neighbours. Newspapers and magazines carried articles and news updates. The national television channel advertised the campaign six times a day, and radio bulletins announced each day's tally of vaccinations.

In April 1986 the health services and their new allies tackled diphtheria, whooping cough and tetanus; over the space of four national vaccination days, nearly 260,000 children under one received a shot of triple vaccine, and over 145,000 were immunized against measles.

The following month, the Minister of Health formally launched Algeria's national programme to halve infant mortality by 1990. The goals include cutting diarrhoeal deaths by 50%, and fully immunizing at least 80% of under-twos. In a new departure for Algeria, mothers are being encouraged to safeguard their own and their children's health by spacing their pregnancies.

During the next three years over 30,000 health workers will be retrained to play a more active role in caring for mothers and children; 600 social welfare workers are already being trained to carry out routine home visits to young families. School-teachers, religious leaders, the women's and youth movements and the mass media have all announced their commitment to supporting the new programme.

Algeria has shown growing awareness that the massive wastage of children's lives is not only intolerable but preventable. And there is every chance that by 1990, the nation's new push for child survival will be saving the lives of at least 40,000 young children every year.

levels of infant and child mortality, literacy, life expectancy, and fertility, and the levels which more developed nations have shown can be achieved.

Such indicators help to keep the real objectives of development in view. And in the 1970s and 1980s, a wide range of these social targets have been worked out by the United Nations and its specialized agencies. The World Health Organization, for example, has set out in some detail the goal of health for all by the year 2000 – including the immunization of all children by 1990.* Similarly, the International Drinking Water Supply and Sanitation Decade has set the goal of clean water and safe sanitation for all by 1990. In relation to the well-being of children, the General Assembly of the United Nations has made the overall goal very specific, suggesting that countries with infant mortality rates higher than 100 deaths per 1,000 live births should be able to reduce that rate to 50 or less by the year 2000, and that all countries could achieve a 50% reduction over that same period.

Similar goals could be set for household food availability, for basic education and literacy, for adequate shelter and nutrition, and for progress towards equality for women. In other words, it is now possible to put together a well-informed series of social goals which add up to a direct attempt to overcome the worst manifestations of world poverty in the remaining years of this century.

Achievable goals

In the last four decades of decolonization and development, much headway has been made against the problem of poverty. But in the 1980s, two question marks are poised over that achievement. The first asks what can be done about the poorest billion people on earth who have been largely bypassed by this progress – that poorest quarter of humanity where are to be found the great majority of the 40,000 young children who now die every day (fig. 7). The second question is whether the hope of achieving these great social goals must be relinquished under the pressure of economic recession, or whether there are ways of maintaining such human progress – even in the present economic climate.

It is already abundantly clear that espousing the goals themselves is simply not enough. Standing alone on distant pedestals, they can easily become like the vaguely respected gods of a forgotten religion. To become a force for change, they need to be broken down into practical step-by-step strategies which are capable of exciting political will and political ambition rather than attracting only pious hopes and paper promises. They must be translated into goals which can be understood and acted on by the many rather than the few. And they must be rendered capable of being put into practice more simply, stage by achievable stage, rather than being endlessly discussed in terms of ever more daunting complexity.

Once such specific and understandable goals are formulated, it is UNICEF's belief that today's new capacity for mass communication can come into its own as perhaps the most important force for social development in the 1980s. For if such stage-by-stage goals can be set, then strategies of social mobilization can begin to involve whole societies, and a wide range of new resources, in the achievement of those goals. And significant human progress may therefore be maintained even in a period of serious economic difficulty.

This approach is already being pioneered by many developing nations acting on today's knowledge about child survival and development. It is an approach based on political commitment to an initial set of objectives – such as universal immunization or the control of diarrhoeal disease – followed by all-out social mobilization to achieve them. And it is an approach which has already shown that it is capable of taking known low-cost solutions to

* In May of 1986, the thirty-ninth World Health Assembly also called on its member states "to use the health status within the population, and in particular its changes over time among disadvantaged groups, as an indicator for assessing the quality of development".[1]

Universal immunization: renewing the commitment

On 25 October 1985, as the United Nations entered its fifth decade, heads of state and senior officials of 21 governments joined with ordinary citizens to sign a Declaration of their commitment to immunizing all the world's children by the year 1990. Ten months later the tally of signatories had risen to 74 governments and more than 400 voluntary organizations, from both developed and developing countries.

The thousands of signatures bear witness to growing international confidence that the goal of universal protection against six killer diseases, first adopted by the World Health Assembly in 1977, has now moved within reach, thanks to improved vaccine technology and to new strategies for informing the world's parents about the benefits of immunization.

The 'People's Forum' held in New York to inaugurate the Declaration brought together citizens of more than 60 countries – close to half the United Nations membership. UN Secretary-General Pérez de Cuéllar was one of the speakers:-

"It is an offence to human conscience to allow disease to take its present heavy toll of death and disability. The death of one child, when that death could have been avoided, is a rebuke to all humanity."

Nearly all the developing countries on the roster of signatories also rank among 77 nations that had already informed the Secretary-General of their intention to immunize the majority of their children. Putting promise into practice, over three-quarters of the developing countries that have taken up the Declaration have already launched accelerated immunization programmes. And to cite just one donor country, Prime Minister Brian Mulroney of Canada signed the pledge only a week after his government announced a grant of $18 million for vaccination programmes in poorer countries of the Commonwealth.

"Today is the first full day of the International Year of Peace," said Prime Minister Mulroney at the signing ceremony. "Peace is not only the absence of war, it is the right to grow and to live..."

Excerpt from the Declaration

We the peoples,

determined to save succeeding generations from the scourge of preventable diseases which today claim the lives of over 3.5 million children each year and permanently disable 3.5 million more,

have resolved to combine our efforts ... to achieve the United Nations' goal of universal child immunization by the year 1990,

and do consider this renewed commitment a fitting commemoration of the Fortieth Anniversary of the United Nations.

Governments signing the Declaration

Africa: Botswana, Burkina Faso, Burundi, Central African Republic, Congo, Côte d'Ivoire, Djibouti, Ethiopia, Ghana, Guinea, Kenya, Lesotho, Malawi, Mozambique, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Uganda, United Republic of Tanzania, Zimbabwe

Americas and the Caribbean: Argentina, Belize, Brazil, Canada, Colombia, Costa Rica, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Peru

Asia and the Pacific: Australia, Bangladesh, Bhutan, Burma, China, India, Indonesia, Japan, Malaysia, New Zealand, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand

Europe: Austria, Bulgaria, Denmark, Finland, France, German Democratic Republic, Holy See, Italy, Norway, Poland, Portugal, Spain, Sweden, Turkey, Yugoslavia

Middle East and North Africa: Cyprus, Democratic Yemen, Egypt, Iran, Iraq, Jordan, Morocco, Syrian Arab Republic, Tunisia

priority problems and putting them into action on a massive scale.

Such an approach is made possible by advances in knowledge in many fields of social development and by the advances in communications and support capacity which most developing nations have made over the last forty years. If that capacity can be preserved from erosion by economic recession, then together these two advantages now make it practicable to attack, at a cost which the nations of the world can afford, some of the priority issues of human development – promoting primary health care, improving household food availability, increasing productivity, reducing the demands on the time and energy of women, and improving housing, water supply, sanitation, and basic physical living conditions.

It is therefore now conceivable that the social mobilization approach could be applied to a succession of specific objectives and that the nations now applying this approach to child health may therefore be also pioneering a path towards an even greater objective – the overcoming of the worst aspects of absolute poverty in the remaining years of this century.

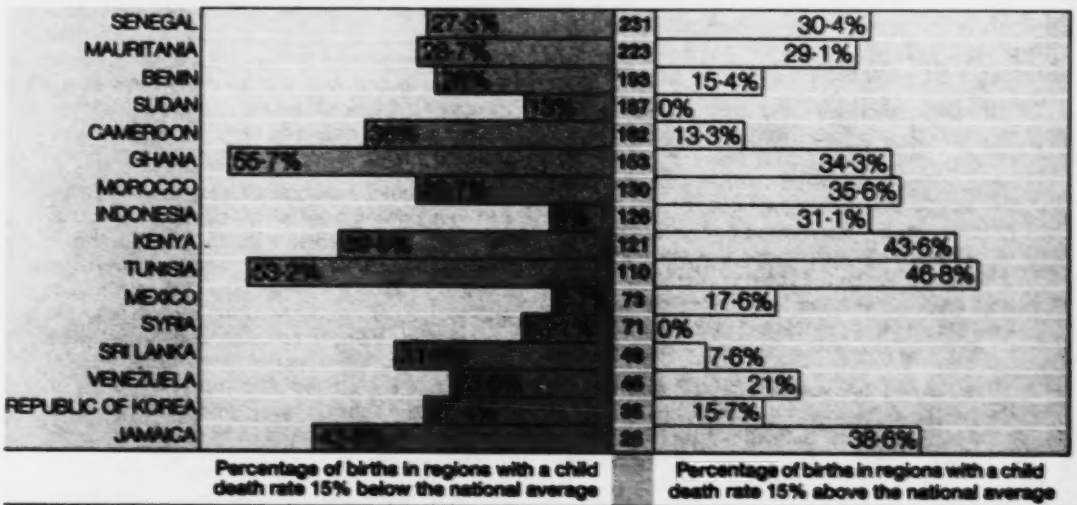
But for social mobilization to be effective, it is essential to break down social goals into 'do-able' propositions which can generate political will and mass participation by demonstrating that significant improvements can be brought about by mobilizing existing capacity to do what is affordable and achievable *now*.

The courage to act

This strategy of social development also represents a different, more practical, less ethnocentric, and ultimately more ethical approach to the development problem.

Fig. 7 Inequalities in child death rates within different regions of the same country

The bar chart below shows the percentage of births in regions where child death rates are 15% above or below the national average. The greater the total width of the bar, therefore, the greater the internal inequality in the distribution of those benefits which reduce child deaths. The actual under-five death rate for each country is given in the central column (countries are listed in descending order of U5MR).
The particular countries featured on this chart are those for which figures are available. In future years, it is hoped to produce more comprehensive figures, including figures for industrialized countries.



Source: UNICEF analysis of unpublished World Fertility Survey data.

Burkina Faso: one village, one health post

At the end of 1984, Burkina Faso immunized over a million children in a single three-week 'vaccination commando'. Since then a health care 'commando' has seen to it that every one of the country's 7,500 villages now has a health post, with two trained volunteers at work.

The obstacles looked insuperable. With an average per capita income of $160 a year, the West African nation is one of the poorest in the world. Fifteen years of drought have taken their toll on a largely rural population of 7 million. One out of four children dies before the age of five, and 40% are seriously malnourished. Measles alone accounts for half of infant and child deaths.

To rally support for Vaccination Commando, the new government swiftly organized vaccination committees in each village, district and province. Roadside billboards publicized the campaign, and the national radio network broadcast the call to vaccination in all the local languages. The Committees for the Defence of the Revolution – political volunteers active in every community – put up posters in public places and went door to door explaining the benefits of immunization to parents.

Measles, yellow fever and meningitis – all familiar threats in Burkina Faso – were picked as the targets because one shot gives full protection. When the campaign opened, parents and children thronged the vaccination posts. Over 60% of the nation's children under fifteen were immunized against yellow fever and meningitis, and the number of under-sixes protected against measles soared from 7% to 60%. A year later the Ministry of Health estimated that close to half a million cases of measles had been prevented.

The national five-year health plan, drawn up in the wake of Vaccination Commando, aims at immunizing every child under five by 1990. Some 400 health centres are being built or remodelled, and mobile teams travel into outlying areas twice a year to give vaccinations against yellow fever and the six main killer diseases of childhood.

In the meantime, the 'commando' approach was taken up again for an unusual purpose – to build the base for primary health care as rapidly as possible.

The campaign was launched in September 1985 under the slogan "One village, one health post". Over the next six months every village built or refurbished a health hut, elected a five-member health committee to supervise it, and chose a midwife and health worker to staff it. The 15,000 volunteers then received a month's training in prenatal care and safe childbirth techniques, simple first aid, and the treatment of common illnesses like malaria, diarrhoea and respiratory infections. They bear the chief responsibility for ensuring that the children in their charge are fully immunized.

Before going home each volunteer was given a bicycle for home visits, along with a drug or midwifery kit. To enable them to replenish their drug supplies and keep the price low for their patients, the Ministry of Health set up an essential drugs distribution system in April 1986. Within two months 15 dispensaries and 100 people's drugstores were in operation, and more are in the planning stage.

Throughout the country, villagers are taking a key part in improving their own circumstances and so bettering their children's future. By December 1985 their volunteer labour had built over 350 schools, 300 dispensaries and maternity clinics and over 2,000 wells, reducing the costs to the government by about a third. And in the first wave of a 'literacy commando' in early 1986, 36,000 young farmers started two months' training in basic reading and numeracy, with messages about their own and their children's health care included in the curriculum.

It is a less ethnocentric approach because it can transcend Western-biased cultural and political perceptions of development and address itself to goals which are unquestionably universal. All parents, for example, wish to ensure their children's survival. And all parents wish their children to grow normally in mind and body and to be free of constant illness.

It is a more practical approach because no economic or technical abstractions are set up to stand as proxies for progress. Instead, progress is promoted directly and measured directly by standards which are important to all and understandable to all.

Such an approach does not belittle the value of economic or technical development. Indeed, it serves long-term economic development by protecting the development of human resources and is rooted in low-cost action which new knowledge and new technology have made possible. But it recognizes that if technology is to be put at the disposal of the majority then it must be empowering rather than alienating, and that if it is not to serve only the rich then it must be consciously chosen to serve the poor. And by enabling people to act with today's knowledge on their own priorities, it is an approach which puts into practice the main lesson of the last four decades of development effort – that development simply will not happen if it is not the result of people's own decisions and actions based on knowledge relevant to them for purposes selected by them.

Most important of all, this approach of breaking down social goals into 'do-able' stages, and mobilizing all possible resources to achieve them, is deliberately simpler, more achievable, and less dauntingly comprehensive in its initial stages. It is therefore more likely to trigger the necessary political commitment, more likely to generate the necessary resources, and more likely to be put into action on the necessary scale. It is therefore ultimately more ethical than strategies of development which mock the poor by the complex impracticality of their proposals and the lack of achievable starting points from which to progress towards more comprehensive solutions. In the developing world today, time is running out for complex analyses and solutions which ordinary people cannot understand and adopt on any significant scale and which can therefore only be put into action by concentrations of experts working on micro-level development projects which have no earthly chance of ever being replicated on a wider scale. As UNICEF's Karl-Eric Knutsson has written:-

"A whole industry of development has been created with its own organizations and cadres of expertise – the so-called development experts. These achieve recognition and positions of power based mainly on skills and competences which are acknowledged in their own peer groups within the orthodox framework of institutionalized models. This has often led to a mammoth production of complex problem analyses regardless of their relevance to the specific situation, rather than 'do-able' strategies founded on realistic selectivity. The result of this ambition has been either the encouragement of irrelevant action or the discouragement of any action at all, since problems are presented as being so intrinsically complex that the courage to act is killed. What is required is both a new and a more informed problem analysis relevant to the people sharing the problem and not only to the development expert.

"When goals exist and are accepted and undisputed, the possibilities of introducing new skills, and building effective organizations to achieve them, are greatly facilitated. Addressing important goals of ordinary people in great numbers can also release their social energy and increase their control over other aspects of their situation and make it possible to pursue other important goals of development. In this way, one set of actions lays the foundation for the next in a pragmatic and durable way. It is only through such a phased integration over time, in which demonstrable results are achieved and perceived at each step, that energy and competence can be released in a cumulative way towards the next set of goals.

"Furthermore, in country after country the commitment to the goal of health for all, and to accelerating social, professional and political action to achieve it, is proving 'do-able'. This shows that in many cases the political will does exist but

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has not been released because the development experts have not come up with solutions which are financially and politically feasible.

"In the last analysis, it is simply unethical to produce non 'do-able' propositions. This is not an argument for 'less and cheap' for the poor but a strong plea for a start to be made with effective and relevant action with and for the poor and the vulnerable, who are now often deprived of development by the over-sophisticated nature of the plans emanating from the development industry. This initiation of a process may not be the optimal beginning, but at least it will be a beginning while waiting for the perfect infrastructure to be put in place or for the necessary reallocation of resources to grace the shanty towns of the cities and the homes of the rural poor."[4]

Mobilizing all for child health

For child survival and child health, social mobilization has already proved its power. If the present momentum can be sustained, and if more nations begin mobilizing to put today's low-cost child health breakthroughs at the disposal of parents, then it is clear that the initiatives of the 1980s can save the lives of some 5 million children a year by 1990 or soon afterwards.

In other words, the mid-1980s may come to be seen as the time when our world began to make its greatest conscious effort to protect its children from the worst aspects of poverty and to move decisively out of the dark ages of child health.

If it can be achieved, the mass promotion of the most powerful methods of child health protection could also serve as a 'thin end of the wedge' for the more comprehensive primary health care services to which every child has a right. For in empowering people with the information to tackle some of their own priority health problems, and in deploying essential supplies and trained community health workers in support of those efforts, child survival initiatives can begin building practical primary health care from the ground up.

Pages 56 to 64 of this report will have more to say about this issue of primary health care and the continuing promotion not just of survival but of the child's normal healthy growth and development.

But first it is necessary to summarize the basic advances in knowledge which, allied to today's new capacity for communication and support, could enable parents themselves to bring about this revolution in child health.

Family knowledge

The present potential is based on the fact that new and vital pieces of health information have emerged from relatively recent scientific research. That information could now enable parents the world over to protect their children, at a cost they can afford, against the main causes of malnutrition and disease.

So far, this information has been published in research papers, conference documents, and medical journals. It has also been summarized and popularized in the publications of the World Health Organization and in UNICEF's earlier reports on *The State of the World's Children*. In 1987, it will be brought together in book form, setting out the basic facts, the evidence for those facts, and the opinions of scientists and health workers in many countries of the world.*

* The book will be published by UNICEF and Oxford University Press in 1987. Details can be obtained by writing to UNICEF, Division of Information and Public Affairs, UNICEF House, 3 UN Plaza, New York, NY 10017, USA.

This information is the scientific core of what is now possible. But because its power depends entirely on its being known and understood not only by all levels of the health services but by politicians, planners, press, public, and above all by parents, it is necessary to persist in making that information available in non-specialist language. What follows is therefore a brief summary, in plain language, of the basic knowledge which could now enable most families to prevent the everyday emergency of child malnutrition and child death:-

○ All families, for example, have a right to today's basic knowledge about the most common of all childhood illnesses and the most common cause of child death – diarrhoeal disease. They need to know that diarrhoea in small children is not 'normal' or 'harmless'. They need to know that frequent diarrhoea can prevent their children from growing properly. And they need to know that it can also kill, quite suddenly, if it drains too much water out of their children's bodies.

Once aware of the problem, all families also have a right to today's knowledge about what they can do about it:-

○ First, they need to know that it is essential to continue to give food and fluids to a child with diarrhoea. If the child is breast-feeding, then continuing to breast-feed is the best treatment of all. Advice to 'rest the bowel' by withholding food and drink is wrong advice: it will prolong the diarrhoea; it will lead towards malnutrition; and it will increase the risk of death from dehydration.[1]

○ Second, parents need to know that when a child has diarrhoea it should also be fed a special solution, in a cup or by spoon, in order to put back into the body the amount of liquid lost during the diarrhoea (see figs. 8 and 9). The solution can be made up by adding water to the contents of a packet of 'salts' costing approximately 7 cents. If the packets are not cheaply and easily available from corner shops or local health centres, then all parents should know how to make up an effective and safe solution from ingredients they have in the home (for example, sugar or rice combined with water and salt in the right proportions).[2]

○ Next, all parents need to know that if the diarrhoea persists and the child grows visibly weaker, then the child's life is in danger and it is essential to get the child to a health worker without delay.

○ Finally, they need to know that diarrhoeal disease is usually transmitted by human faeces, especially the faeces of children, and that it can be spread by water and by flies. They need to know that a great deal of illness can be prevented by using latrines, by drinking water which is not polluted, by burning rubbish, by washing hands before preparing or eating meals, and by keeping flies away from food. In some cases, the poverty of the parents' circumstances may mean that it is not possible for them to act on all of this information. But this does not mean that they do not have a right to know why it is that their children are so frequently ill.

Basic protection

The knowledge just outlined could enable parents to save approximately 3 million children a year from dying of diarrhoeal dehydration and a much larger number from growth faltering and malnutrition. Equally straightforward information can help them build other walls of protection against other major threats to their children's life and health:-

○ Immunization against six major diseases – measles, tetanus, whooping cough, polio, diphtheria and tuberculosis – could prevent over 3 million child deaths a year and protect even larger numbers from the downward spiral of frequent illness and poor growth. Yet the single most important factor holding down immunization levels in the 1980s is that millions of parents have not been sufficiently well informed, clearly enough and often enough, of the importance of a full course of vaccinations.[3] All families now have a right to know that two immunization visits for the mother-to-be, and three to five immunization visits for the infant during its first year of life, are essential for protection against

Colombia: protecting four million children

The challenge of safeguarding children's chances of survival and sturdy growth cannot be met by the health services alone. For the past three years Colombia has led the way in showing how support can be marshalled from every side for a sustained attack on the infection and malnutrition that threaten children's lives.

The story began with a 1984 immunization crusade. For three separate days in June, July and August, the call to vaccination went out from the President, the health services, the Church, the Red Cross, provincial governors and mayors, newspapers and broadcasting stations, schoolteachers and the Colombian Scouts Association. Nearly 60,000 volunteers helped to man over 10,000 vaccination posts set up in market-places, at street corners, in health clinics and schools. The vaccination rate of Colombia's children under five was lifted to over 60%.

A second vaccination crusade was run in 1985; 385,000 children were fully inoculated against five major diseases and nearly 700,000 women received two shots against tetanus. The drop-out rate in under-ones, between the first and third doses against polio and against diphtheria, whooping cough and tetanus, fell from 50% to around 15%. And the number of measles cases reported in 1985 was less than half the number reported in the previous year.

The success of the 1984 crusade laid the base of Colombia's five-year plan for child survival and development, launched in December 1984.

The plan focuses on protecting Colombia's nearly 4 million children under five, who currently account for more than a quarter of all deaths. The aim is to lower child mortality by vaccinating over 80% of under-fives, halving child deaths from diarrhoeal dehydration, cutting deaths from respiratory infections by at least a third, and preventing complications of pregnancy and childbirth. A nutrition surveillance programme will tackle the chronic malnutrition that stunts the growth of one in four Colombian children.

In 1985 and early 1986, 50,000 volunteer 'health monitors' were trained in 280 courses run by the Ministries of Health and Education and the other institutions involved in the child survival plan. In 1987, when the plan is in full operation, 300,000 monitors will be at work in their community, visiting door to door to advise parents on child care and referring children in need to the health services.

The health monitors are drawn from the ranks of Red Cross volunteers, the Colombian Institute for Family Welfare, the Scouts Association, the national police, and the priests, nuns and lay volunteers of the Catholic Church. But the majority are high-school students: by a presidential decree of February 1985, all ninth-graders receive 20 hours of training and then do 80 hours' work in their community. The Ministry of Education is also revising the school curriculum so that students in every grade will learn 16 proven measures to protect children's growth and development.

The Catholic Church has been a strong ally in all these efforts. The Church has already trained 1,500 health monitors and is currently training 5,000 parish agents to counsel parents, engaged couples and godparents in child survival techniques. The agents will be serving 75,000 families, chiefly in remote areas.

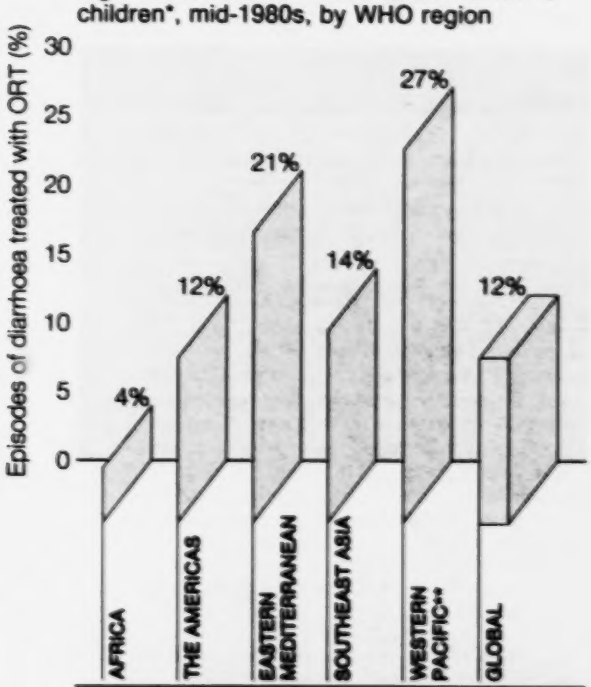
At the same time, the Colombian Red Cross has helped to set up 1,200 distribution points – nearly half of the planned total of 2,556 – for promoting oral rehydration therapy and distributing oral rehydration salts.

When the force of volunteers grows to its full complement of 362,000 in 1989, they will be shielding the vast majority of Colombia's children – especially those in poverty – from needless death and disability.

some of the main causes of disease, poor growth, malnutrition, and early death.

○ All families also have a right to today's new knowledge about the importance of breast-feeding. Breast-milk, especially the yellowish liquid which appears for the first two or three days after birth, helps to protect the baby against common infections. And for the first four to six months of life, breast-feeding provides all that a baby needs in the way of food and drink. Again, the decision may not be a simple one and there may be many other factors for parents to take into account. But they at least have a right to the facts: and the facts are that a baby under the age of six months who is bottle-fed in a poor community is approximately three times as likely to fall ill and three times as likely to die as a baby who is breast-fed.[4]

Fig. 8 Estimated ORT use rates in under-5 children*, mid-1980s, by WHO region



Notes: * Estimated percentage of episodes of diarrhoea in children aged 0–4 years treated with ORS (sachets of pre-mixed salts made up to the WHO/UNICEF formula) or home-made sugar and salt solutions.
** Excluding China.

Source: Adapted from: Diarrhoeal Diseases Control Programme, Fifth Programme Report 1984–1985, World Health Organization, Geneva, WHO/CDD/86.16.

○ All families also have a right to know that breast-milk is no longer enough after the age of about four to six months and that other foods – in addition to breast-milk – must then be given if an infant is to continue to grow properly. Recent research has also shown that, for a high percentage of the world's children, weaning begins either too early or too late – either of which increases the risk of malnutrition and infection.*

○ When weaning does begin, parents have a right to know that a small child has very special feeding needs. First, breast-feeding should continue – if at all possible – until well into the second year of life; other foods are an addition, not a replacement. Second, a small child needs feeding more frequently than other members of the family and with more energy-packed foods. A child's stomach is smaller than an adult's whereas its energy needs are proportionately greater. Therefore the child must somehow get more energy from less food. Achieving that will mean feeding more frequently with foods to which energy has been added – either by using sprouted grains** or by mixing in fats or oils such as vegetable oils, margarines, peanut butter, coconut oil, ground-nut oil, or their local equivalents.***

○ Acute respiratory infections kill more than 3 million small children a year. In most cases of cold or fever, parents need do no more than give the child plenty of liquids, continue to breast-

* Weaning means not the cessation of breast-feeding, but the introduction of other foods in addition to breast-milk. Ideally, infants should be exclusively breast-fed for the first four to six months of life, and supplementary food should be introduced thereafter – never later than the eighth month. If possible breast-feeding should continue well into the second year of life.

** See footnote *** page 67.

*** In poor areas of the developing world, where only about 5% of energy intake comes from fats, improving diets usually means more oil and fats. In the industrialized world, where approximately 40% of energy intake already comes from fats, improving diets usually requires the consumption of less fat.

Brazil: reaching the north-east

The government and Catholic Church of Brazil have announced a common goal – drastically reducing the nation's child deaths before 1990.

A third of the million children who die each year in Central and South America are Brazilian. The worst of the country's economic recession has ended, but without significantly narrowing the gulf between rich and poor; in the impoverished north-east, home to a quarter of the population, infant mortality is double the national rate. Though Brazil ranks among the world's largest food exporters, over 50% of Brazilian children suffer some degree of malnutrition.

In August 1985 the new civilian government launched a major initiative to shield children from the effects of poverty – the national 'Child First' programme, to be run by the Brazilian Assistance Legion, with an additional budget of $80 million for 1986.

The programme builds on two trials in poor city areas, where 480 project workers and 13,000 volunteer mothers learned simple measures for child survival; infant mortality fell by two-thirds within a year. The Brazilian Assistance Legion already runs health and day-care centres for nearly 2 million children and over a quarter of a million mothers. With its new funding the Legion is now improving existing services and starting new centres for 1.2 million children in the north-east, as part of a national effort:-

- Regular monitoring to watch over children's growth is now being advocated in all the programmes of the Brazilian Assistance Legion, as is oral rehydration therapy to forestall diarrhoeal dehydration.
- All government hospitals promote breast-feeding, and 'room in' mothers with their new-born babies to encourage breast-feeding. Safeguarding nutrition, especially for children and their mothers, takes a major share of the government's 1986 allocation of $3.7 billion for social priorities.
- For six years now, Brazil's twice-yearly immunization days have mobilized 400,000 volunteers from every walk of life to give oral polio vaccine. There are warning signals that campaign coverage has fallen since the early days, when up to 20 million children were being vaccinated on a single day. The number of polio cases rose in 1985, but the government took measures to force the rate down again in 1986.

The Catholic Church, too, is reaching out in the north-east, reinforcing the government programme: the goal is to bring low-cost child survival measures to a million children under six. The 'Pastorate of the Child', started by the National Conference of Brazilian Bishops in 1985, had its origins two years earlier, when an experiment in one southern town halved infant mortality within a year.

The Pastorate of the Child is now active in 400 communities in 20 of Brazil's 26 states, especially in the north-east. Some 20,000 project leaders and volunteers have been recruited from their communities and are working under the guidance of 800 project co-ordinators to promote children's survival and healthy development.

Older children in need have not been forgotten. Government and voluntary agencies have joined forces to find alternative ways of helping the large numbers of children who have been abandoned or driven by poverty to scavenge a living on city streets. A national movement has grown up in support of this undertaking; and the first street children's conference in May 1986, which brought together 400 children from all over Brazil, sparked off a new interest and concern for their needs.

Brazilian President José Sarney summed up the shared commitment to the nation's children when he announced the Child First programme:-

"This government wants to see the problem of poverty solved, since it affects the country's strength and greatest hope: her children... This government does not wish to leave as its legacy the bomb of absolute poverty ticking, nor the fuse of hunger and malnutrition burning."

feed, and try to keep the child's air passages clear to help normal breathing. But all parents have a right to know when an ordinary cough or cold is turning into a life-threatening illness. Not everyone has access to a clinic or a trained health worker, but more than half of all poor families could now get trained help – *if* they knew that their child's life was in danger. Such knowledge is not complicated. It can be put into a sentence. In a child suffering from a bad cold, if breathing becomes markedly more rapid than usual, and particularly if the area just below the child's ribs is being drawn in when the child breathes in (rather than expanding outwards as normal), then that child needs to be taken to a qualified health worker immediately.[5] In such cases, treatment by penicillin, costing only a few cents, can save a life.

○ A child who does not get enough vitamin A in his or her diet is at risk of being permanently blinded and is much more likely to catch common illnesses, to become malnourished, and to die. All parents now have a right to know that this can be prevented, at very low cost, by making sure that some green leafy vegetables are added to the child's food at least twice a day. The cheapest vegetables will do and they are almost always available to, and affordable by, the majority of the poor.[6]

○ It is now known that birth spacing and basic care in pregnancy and delivery can reduce deaths among mothers and young children by approximately 50%. All parents therefore now have a right to know that a mother-to-be needs more food and more rest, for her own sake as well as the baby's,* that she should have at least two check-ups (to include anti-tetanus injections if necessary) during pregnancy, and that a trained person should be present at the birth itself.

○ A space of less than two years between births doubles the risk of child deaths in low-income families.[7] All parents now have a right to that knowledge.

○ Smoking and the abuse of alcohol or drugs – especially during pregnancy – is a serious health risk for both mother and child.

○ Finally, as this report will later argue in more detail, all parents have a right to the earliest possible warning if their child's growth is showing any signs of faltering (something which can only be detected by regular weighing) and to advice and help on what to do about it. And because the child's growth pattern is the product of all other factors, regular weight gain is both the aim and the measure of all of the actions brought together in this brief summary (see pages 64 to 81).

Everyone's information

In some cases, poverty itself will prevent parents from using all of this knowledge. But for most parents in the poor world, these low-cost child protection measures will save on the money, the time, the energy, and the worry which frequent child illness demands of the child's parents.[8] In most cases, families will need support and advice – and the nature of that support will shortly be discussed.

The issue to be addressed first is that most of the information just summarized is not even known to most of the world's parents. And in the age of the information revolution, for that state of affairs to continue would be nothing less than a callous neglect.

Information which could enable parents to drastically reduce disease, malnutrition, and deaths among their children is information which every parent should have. It is information which ought to be part of every family's basic stock of knowledge. It is information which ought to be a part of the normal way of bringing up children. It is information which therefore ought to be made available to every community via the schools, the radio, the television, the newspapers, the health

* In the developing world, low birth-weight babies account for approximately 20% of births but between 30% and 40% of infant deaths. Extra food in pregnancy can reduce the incidence of low birth-weight and is one of the most cost-effective of all methods of promoting the health of both mothers and children.

Bangladesh: reaching 25 million

After teaching more than 7 million women how to treat diarrhoeal dehydration with salt and molasses, the Bangladesh Rural Advancement Committee (BRAC) is moving on to a wider range of measures to safeguard children's lives.

In 1986, BRAC began trials for a four-year $8 million child survival programme, one part of which will put diarrhoeal management, immunization and vitamin A capsules within reach of 25 million people, roughly a quarter of the country's population. A second part of the new effort will focus even more comprehensive primary health care on a population of 3 million people. The new programme draws on the cadre of over 1,200 veterans of the six-year house-to-house oral rehydration campaign. One of the world's largest and most sustained efforts to put a medical advance into the hands of mothers, the programme employed hundreds of young women to coach and demonstrate oral rehydration in more than 7 million households.

As the programme progressed, however, BRAC became convinced more was needed. Health problems were too many and too interlinked for a single intervention to have a major impact on infant and young child mortality.

Widespread malnutrition, epidemics, lack of sanitation and the often unsafe practices of traditional birth attendants demanded additional action.

Most of all, the community itself – not just mothers – needed to be actively involved through reinforcement by teams which stayed on longer, to train villagers in a range of health and nutrition improvements.

Now, the lessons of 1980-1986 are being applied in the new programme. Groups of women will be trained in effective diarrhoea management, which could save some 300,000 under-fives each year in Bangladesh. A new rice-based rehydration mixture developed by the country's International Centre for Diarrhoeal Disease Research will be field-tested.

The programme will also tackle immunization. Despite hundreds of government and private health centres, fewer than 2% of Bangladeshi children were immunized against diphtheria in 1984; coverage for other diseases was even lower.

The programme aims to help the government immunize 80% of all mothers of child-bearing age against tetanus and all children under two against six major killers. Tetanus kills many mothers as well as accounting for 42% of neonatal deaths. Measles, polio, diphtheria, whooping cough and tuberculosis are responsible for 30% of all childhood deaths.

To improve child nutrition, the programme will use radio and other means to encourage breastfeeding from the child's first day of life, and later on a better balance of vitamins in the traditional diet. A particular target is vitamin A deficiency which each year blinds 30,000 Bangladeshi children and leaves several hundred thousand more with impaired vision and particularly vulnerable to infections and respiratory diseases.

Over the next four years, every child from six months to six years in the population of 25 million will get a vitamin A capsule every six months.

In the more comprehensive part of the new programme, BRAC will train 9,000 birth attendants in safe delivery methods, how to identify high-risk pregnancies and what to advise mothers about better nutrition for themselves and their children.

Following the lessons of experience, BRAC will train some 10,000 villagers to take a lead in community-managed health care. These will serve on village health committees helping teams from BRAC and the government to generate community interest, organize immunization days and distribute vitamin A capsules. Then, when BRAC departs, the people they have trained and the lessons of the experience will remain.

workers, and by every other possible means of communication and support.*

In other words, it is an urgent task of mass communication, a task for which the world has increased its capacity immeasurably over the last ten years. But if the information revolution of our times is not to serve only the rich, then its potential for serving the poor will have to be consciously exploited.

The expertise and the skilled manpower available within the health services can guide a communications effort on the scale demanded. But the task itself is far too large and far too important to be left to the health services alone. By and large, the health services hold their expertise passively, behind white coats and clinic walls, and are fully occupied in dispensing that expertise to those who come to seek it out because they or their families are ill. Most health services are therefore not yet in the business of mass communication and education, of promotion and prevention, of going out into the community to empower families with information to improve their own health.

In the industrialized world, important scientific knowledge about the health dangers of smoking or alcohol, or about the health benefits of exercise and good eating habits, has been brought to the mass of the better-educated population** not only via doctors or clinics or medical journals but by television and radio, by newspapers and magazines, by primary and secondary schools, by public-service advertisements and well-known personalities, by the sports clubs and the weight-watching groups, by pressure groups and anti-smoking lobbies.

Today an even more effective alliance between the knowledge of medical professionals and the outreach and communications capacity of a wide range of other institutions is needed to put even more vital health information at the disposal of the peoples of the developing world. And as the panels in this report show, it is an alliance which is beginning to be forged in some nations but which, in most, will need far more active governmental and public support.

In both industrialized and developing worlds, therefore, the next generation of advances in human health will come not from greater reliance on the medical profession or from new scientific breakthroughs, valuable as they may prove to be, but from fully exploiting today's new potential for the communication of existing knowledge in order to empower more people to take more control over their own and their families' well-being. Poverty, commercial pressures, and government priorities all have a profound influence on human health and the struggle on those fronts must continue. But at this time, the path of greatest potential is the path of exploiting existing knowledge and new communications capacity to enable individuals and communities – in both developing and industrialized nations – to improve their own physical and mental health.

Information for the poor

The need for a mass communications effort of this kind, and the impatience which many of those involved in promoting child health now feel, is best exemplified by the case of oral rehydration therapy.

This 'new' therapy has been theoretically available for the last ten years, during which time dehydration has killed approximately 30 million young children – many more than the total number of under-fives alive today in Europe or North America or the Soviet Union. By any standard, ORT is therefore the equivalent of a decisive breakthrough against cancer or heart

* It is of course true that information is not always sufficient in itself to bring about changes in behaviour. This does not, however, invalidate people's 'right to know'. Information which enables people to make choices is an essential part of the development process.

** The surge of interest and activity in promoting 'self health' – through such actions as taking regular exercise, giving up smoking, healthier eating, reducing alcohol consumption, and the return to breast-feeding infants – tends to be concentrated among the better-educated and usually better-off sectors in the industrialized nations. This is an issue which needs to be addressed if today's potential for communicating new knowledge about longer and healthier living is not to bypass many of the poor in those nations.

Peru: vaccinating 600,000

For three Sundays at the close of 1985, Peruvian vaccination teams travelled deep into rain forest and up into the steep highlands of the Andes – and doubled the number of the nation's children who are protected against five killer diseases.

Difficult terrain is only one of Peru's problems. The country is still recovering from the recession and natural disasters which struck in 1983, and inflation topped 250% in 1985. By 1984 only 28% of one-year-olds were immunized against polio, and 24% against diphtheria, whooping cough and tetanus – one of the lowest vaccination rates in the Western hemisphere. Children under five constitute only 15% of the population but account for over 90,000 deaths a year, or nearly half of all deaths. Respiratory infections, diarrhoea and vaccine-preventable diseases are among the leading causes, along with complications of pregnancy and childbirth.

Tackling these problems one at a time, the government announced its new vaccination plans within three months of taking office in July.

It was clear that the health services could not hope to reach every community on their own. So the government enlisted the help of the Ministries of Education and Agriculture, the provincial authorities, the army, air force and police, the Peruvian Red Cross, the Peruvian Institute for Social Welfare, nursing schools, churches, the Boy Scouts, mothers' clubs, Lions and Rotary clubs, and community organizations. The task of co-ordinating the array of volunteers was entrusted to the country's 19 regional health authorities, working in partnership with Peru's 1,700 district governments.

The benefits of vaccination were publicized in specially donated radio spots, television programmes, magazine articles and posters. Newspapers all over the country carried photographs of the President's one-year-old daughter being immunized on the eve of the campaign. Theatre groups performed plays about immunization in the city streets, and schoolchildren paraded with banners and placards.

Over 14,000 temporary vaccination posts sprang up across the nation, in public squares, hospitals, health centres, schools, mothers' clubs, markets, pharmacies and private homes. 15,000 vaccinators manned the posts, with 45,000 volunteers registering the children as they were vaccinated and ensuring that the work flowed smoothly. In the slums and squatter settlements which house more than half the population of Lima and other cities, the vaccination teams made doubly sure of reaching children by calling at their homes to give them their injections.

More than four million syringes were sent to the vaccination posts; 10,000 locally manufactured vaccine carriers, insulated so that the vaccines would remain cool and keep their potency, were shipped out less than two weeks ahead of each vaccination day. The Ministry of Health provided a fifth of the transport while the armed forces and other organizations lent the rest – trucks, planes, helicopters, boats and even gliders.

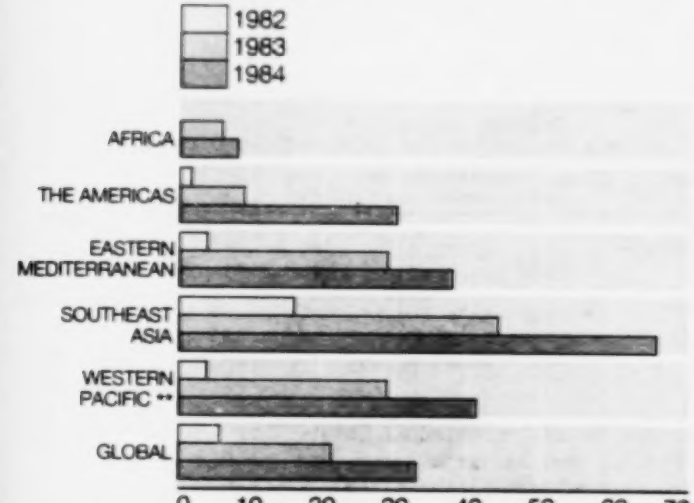
The national telephone network relayed the numbers to a central computer as they came in: 939,000 children were vaccinated on 20 October, nearly 726,000 on 17 November, and 662,000 on 15 December. Nearly 663,000 children have completed the three doses needed to ward off polio, and 643,500 children are fully protected against diphtheria, whooping cough and tetanus. 841,000 children have had their measles shot. The total cost came to $1.62 per child.

The national vaccination days will continue into 1987 and beyond, as one part of a comprehensive programme which will include preventing children's deaths from diarrhoeal dehydration and respiratory illnesses, monitoring their growth, and providing antenatal and post-natal care for their mothers.

disease (diarrhoeal dehydration claims more lives than either – and at a much earlier age). But if an inexpensive way of preventing death from cancer or heart disease had indeed been discovered by science, would it have taken more than ten years to put it at the disposal of the people of the industrialized nations? (See figs. 8 and 9.)

What we are talking about is *information of value to the poor*. By definition, therefore, there is little immediate profit to be made out of such information. And there are consequently fewer commercial channels for making it known and for supporting people in its use. But today that problem is no longer insuperable – as perhaps it would have been fifteen or twenty years ago. Today, enough channels of communication and support do exist – if the will is there to use them, and to use them all.

Fig. 9 Estimated access to ORS, 1982–1984, by WHO region



Notes: * Percentage access means the proportion of the population with reasonable access to a regular provider of ORS who is trained in its use. Calculations assume **no access** in those countries for which no data were available.

** Does not include China.

Source: Diarrhoeal Diseases Control Programme, Fifth Programme Report, 1984–1985. World Health Organization, Geneva. WHO/CDD/86.16

After decades of patient effort, most developing nations have today reached the point at which it *is* possible to inform and support the majority of their people in putting new knowledge into action. And it is that capacity which now makes it possible to link what science knows to what people need.

But to achieve this communications breakthrough for health means actively mobilizing every possible organized resource. It means introducing up-to-date information on child health and survival into the regular curricula of the primary schools which are today attended by nearly three-quarters of the developing world's children. It means asking the co-operation of temples, mosques, churches, and of the religious leaders whose words are heard and respected by hundreds of millions of parents. It means enlisting the daily support of the mass media – of the radio stations which now broadcast to over a billion transistor sets in the third world, of the television stations which now reach over 50% of the people in most developing nations, and of the 8,000 daily newspapers and countless magazines and periodicals which provide information to the 60% of the poor world's people who are now literate. It means asking for the support of the co-operatives and the trade unions, the employers' associations and professional bodies, the publishing houses and advertising agencies, the women's societies and youth movements, the sports associations and film industries. It means co-operating with the tens of thousands of voluntary organizations who are often working in the places where the need is at its greatest. It means reaching out via every relevant department of government and the social services as well as through the hospitals and clinics, the doctors and nurses, the paramedics and the traditional birth attendants, and the growing numbers of primary health care workers.

Before looking at some examples of the countries now pioneering this strategy of social mobilization in the cause of immunization and ORT (see pages 35 to 56), it is necessary to say that there are those who think that all this is

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somewhat naive and distasteful, that it is a vulgarization of medical and scientific knowledge, that health is best left to professionals, that mass mobilization and mass communication of the kind we are talking about is a strategy appropriate to commercial marketing or political campaigning but not to the promotion of health.

The reply is that a child is now dying every ten seconds of diarrhoeal dehydration because we have not yet made a serious effort to inform that child's parents – using every possible method and every possible channel – that there is a simple, cheap, and effective way of saving their child's life.

The reply is that six children are dying and another six are being physically or mentally disabled every minute of the day and night because immunization, a technology which has been universally available to the rich for over thirty years, has not yet been made available to even a majority of the poor (fig. 10).

The reply is that every hour another 25 children are being permanently blinded because we have not yet made available to their parents basic information about vitamin A which would enable them to save their children's eyes.

Today the channels do exist for making available that information of value to the poor. And if enough organized resources can be mobilized to communicate that information over the next few years, and if enough of the time and skill of the professional health services can be deployed to support that effort and to respond to the demands it will inevitably create, then today's knowledge can bring in a new era in child health.

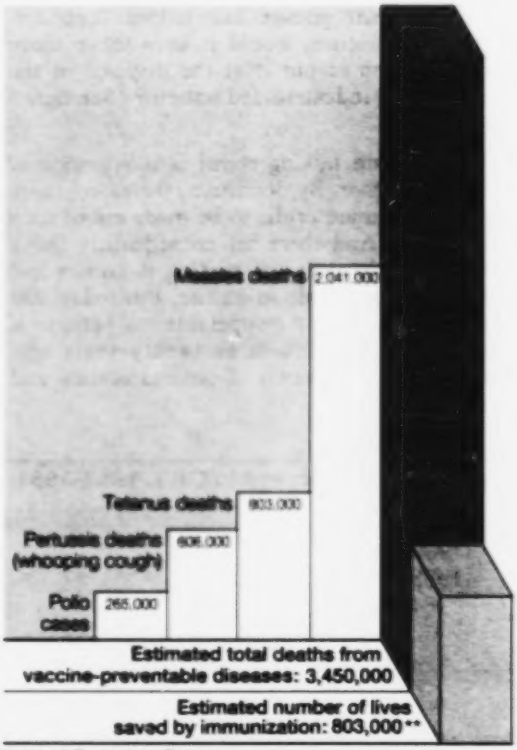
Such an achievement would not be an isolated victory in the war on poverty. For it would demonstrate in practice how other 'worst aspects' of poverty could be overcome. And it would in itself contribute to both a slowing down of population growth and an acceleration of economic growth.

Support for mothers

Social mobilization to achieve development objectives is a strategy which, by definition, invites the involvement of all. But it will be clear from all that has gone before that the most crucial involvement is that of the mother herself.

In an ideal world, and perhaps in the future, it will be possible to say parent rather than mother. But today, in practice, it is the mother who is at the centre of the circle of child care. And it is the well-informed and well-supported actions of mothers which can now turn the key to release so many children from the prison of frequent illness, poor growth, and early death.

Fig. 10 Vaccine-preventable deaths in the developing world*, 1985



Notes: * Excluding China.
** The figure of 803,000 deaths averted by immunization is based on data originating earlier than 1985. In view of recent increases in immunization levels in many countries, UNICEF estimates that the current figure is in excess of one million.

Source: "Global overview: the expanded programme on immunization", Cartagena, Colombia, October 1985.

But it would be an utterly false conclusion to imply that women can turn that key by themselves. For the present potential to be fulfilled, women will need the support of their families and their communities, and of both national and international development efforts, in putting into action today's knowledge about how to improve their own and their children's lives.

First of all, new information must be put at the disposal of millions of mothers repeatedly and from all sides. For as experience in the industrialized world has shown, the saturation of all possible media with the frequent repetition of essential messages is necessary for the communication of both new knowledge and the confidence to use it.

Just as important as new information, women also need both moral and practical support if they are to have the confidence, the time, and the energy, to put today's knowledge into effect. Mothers are already the principal providers of the third world's health care. They are already the principal growers of the third world's food. They already bear and care for the third world's children. They already make, wash and mend the third world's clothes. They already clean the third world's homes, collect the third world's fuel, cook the third world's food, fetch the third world's water, and look after the third world's sick.

The revolution in child health which is now possible could help to spare millions of mothers much of the time and the effort, the expense and the worry, which is now expended on almost constant child illness. But to put that revolution into practice they will need the practical help of all around them.

From health workers in every community, mothers will need on-the-spot advice and help in putting new methods into practice. From their own families and communities, women will need more recognition of the importance of a mother's job and more practical help with all the time-and-energy-consuming tasks it involves. The support required is not vague or abstract: it comes down to practical and specific things – such as a minimum of two years between births, and extra food, extra rest and extra care during pregnancy – things which can only be brought about through greater knowledge and understanding among *men* as well as women.

From government services and development agencies of all kinds, women need more recognition of their central role and more practical support in the form of training and technologies to ease the burdens of water and fuel collection, to improve productivity and incomes, to save on back-breaking labour in fields and homes, and to make available the means and the knowledge of family spacing and essential pre-natal care.

That is why mobilizing to use today's knowledge for a better life for today's children must encompass an acute awareness of the existing role of women. For the very significant improvements in child health which are now possible can only be achieved if they are to the benefit of, and not at the expense of, the world's mothers.

The take-off of ORT

Inevitably, most of the nations now making the commitment to a child survival revolution are pushing immunization and ORT into the front line. Not only are these two techniques among the lowest-cost public health weapons ever devised, but they are also capable of overcoming a synergistic group of illnesses which are responsible for more than half of all child deaths and more than half of all child malnutrition in the world today (see pages 64 to 81).

India: ICDS and the nation

Of the thousands of projects started every year in the developing world, very few can ever claim that they have permanently and significantly affected the life of a nation. But that is what the Integrated Child Development Services (ICDS) scheme is now beginning to achieve in India.

From small beginnings just over a decade ago, ICDS now involves over 200,000 people in promoting basic health care and pre-school education for the poorest 20% of the nation's families. By 1990, the scheme will double in size to reach 40% of all deprived children. By the turn of the century, it is scheduled to serve the poor in every village and neighbourhood of India.

The heart of ICDS is the *anganwadi* – literally, the 'courtyard' – which is given or cheaply rented as a centre for information and help with child care. An *anganwadi* worker is chosen from the local community (minimum age 18) and given three months' training; she receives an honorarium of 250 rupees per month (about $20) for four and a half hours' work, six days a week. With monthly retraining visits from more qualified health officials, the *anganwadi* worker is expected to monitor the growth of children, teach mothers how to prevent and cope with common illnesses (including how to use oral rehydration therapy), educate parents to promote their children's normal growth, organize immunizations and vitamin A distribution, treat minor injuries, organize supplementary feeding where necessary, and act as a referral point for getting more qualified help to children with more serious health problems. All *anganwadi* centres also provide pre-school education and early stimulation activities for children under the age of six.

Because of its scale, the ICDS has become one of the most studied programmes anywhere in the developing world. Many problems have been highlighted – usually to do with uneven quality of training, supervision, or referral. But independent studies have also concluded that ICDS is making a dramatic impact. Malnutrition in ICDS areas has commonly been found to be 60% less than in areas not yet served by the scheme. Infant mortality has also been reduced to below 90 per 1,000 live births as opposed to a national average of 114 – despite the fact that ICDS only operates in poor areas. Immunization rates and school enrolment levels are usually higher, and drop-out rates are lower. And there is a small but already noticeable drop in the birth rate where ICDS has succeeded in improving child health and survival.

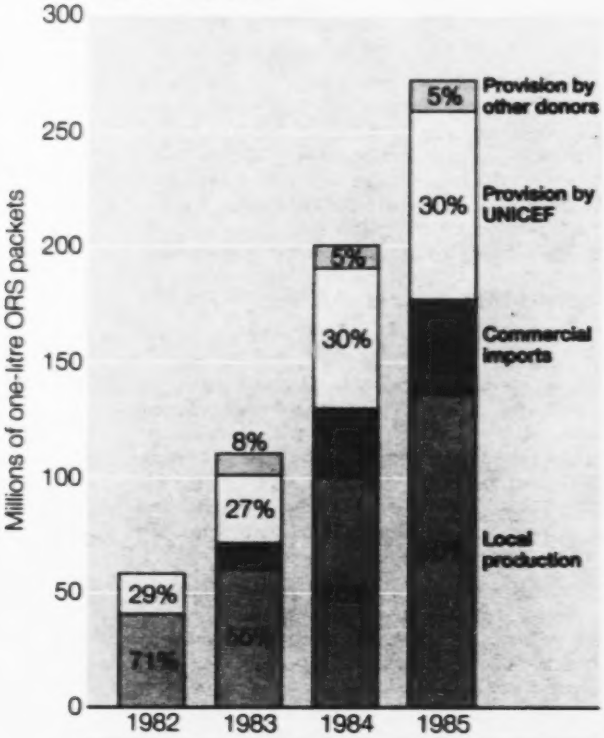
Although the *anganwadi* is a centre for treatment and referral, its main emphasis is on the promotion of all-round mental and physical development by empowering families with both the knowledge and the necessary support to protect their own children's normal growth. In combination with today's knowledge breakthroughs in the fields of immunization, breast-feeding, oral rehydration, growth monitoring, weaning and birth spacing, a 'social breakthrough' such as ICDS is showing that it has the potential to significantly reduce child deaths and child malnutrition.

As part of India's 20-point development plan, ICDS is regularly reviewed at cabinet meetings. It is therefore seen as a central part of the nation's drive against poverty. When the scheme does finally reach all the poor families of India, it will still cost less than 1% of the nation's gross domestic product.

Statistically, the biggest single killer of the world's children is still the dehydration caused by diarrhoea. To combat that dehydration, there is now an oral therapy which is so effective that it is being used in the world's most sophisticated hospitals, so simple that it can be used by all parents in their own homes, and so inexpensive that it can be afforded by almost every family on earth.

In the last two years, ORT has begun to move beyond demonstration projects to produce dramatic results on a larger stage. And this year, it is possible to report on the achievements of one of the first countries to put the new therapy into action on a nation-wide scale.*

Fig. 11 Global supply of oral rehydration salts, 1982–1985



Source: Fifth Programme Report 1984–85, Diarrhoeal Diseases Control Programme, World Health Organization, Geneva, 1986. 1982 figure from UNICEF.

Since 1983, the government of Egypt has been attempting to put ORT at the disposal of all Egyptian parents. Today, 96% of those parents know about the new therapy and 82% have already used it (see panel 3). The result, after so short a time, is the saving of many tens of thousands of children's lives each year.[1] Says Mamdouh Gabr, formerly Egypt's Minister of Health and now Chairman of the Paediatric Department at Cairo University and President of the Egyptian Physicians Association: "*In my thirty-five years' practice as a paediatrician in a developing country, I have not witnessed a greater advance in medicine. One day it will be said that the end of the twentieth century has opened a new era for mankind – the post-ORT era*".[2]

World-wide, progress has not been as rapid as in Egypt. But the last three years have seen an acceleration to the point where ORT is estimated to be saving the lives of half a million children a year (fig. 2).

Almost unknown outside specialist circles at the beginning of this decade, the technique of oral rehydration is now being used by an estimated 12% of the world's families.** By 1990, WHO and UNICEF believe that ORT could be being used by at least 50% of the world's parents, saving the lives of approximately 1.5 million children a year.[3] Within a decade, virtually all parents could be empowered with the knowledge to use ORT and the annual toll of child deaths from diarrhoeal dehydration should then be reduced by more than 3 million (fig. 2).

Reflecting this progress, figure 11 tracks the take-off in the mass production of oral rehydration salts over the last five years. Against a world-wide rise from 50 million sachets of salts in 1981 to more than 300 million in 1986, the percentage supplied by UNICEF has fallen,

* To give a more complete account of the ORT breakthrough and its progress to date, UNICEF has recently published a new study – *A perfect solution* – which is available from UNICEF offices or from UNICEF, Division of Information and Public Affairs, UNICEF House, 3 UN Plaza, New York, NY 10017, USA.

** This estimate includes both packets of ORS (WHO/UNICEF formula) and effective home-made oral rehydration solutions.

Dominican Republic: training 20,000 volunteers

The Dominican Republic has employed an unusual tool – a national housing census – to bring simple measures for child survival within the reach of every family. Over 19,000 volunteers have regularly visited door to door to give vaccinations, anti-parasite drugs and oral rehydration salts to 90% of the nation's mothers and children.

The system started up in June and August 1983. With the housing census maps to guide them, 20,000 volunteers gave oral polio vaccine to 95% of the country's children under five. Two week-ends are now set aside every year for the polio campaigns, which have consistently reached over 80% of children under three. Only one case of polio has been reported, shortly after the first campaign.

In 1985 the Ministry of Health pioneered a new approach, proving that volunteers with brief but careful training can be trusted to give injections. A four-hour audio-visual training programme was tested and retested to provide precise, consistent information on how to vaccinate efficiently and safely. Over 19,000 vaccinators and 10,000 reserve volunteers have taken the course. At the same time the Ministry streamlined its vaccine storage system: vaccines now travel out in insulated cold boxes from a single cold store in Santo Domingo.

The first trial of the volunteers' new skills came in May 1985, when they gave an injection against diphtheria, whooping cough and tetanus to just under half of the country's children under two. A second campaign in February 1986 raised the figure to 92%.

In October 1985 over 615,000 children – 95% of the country's children under five – were immunized against measles. The results have not needed long to show up: in the first four months of 1986 the leading paediatric hospital in Santo Domingo treated only 14 cases of measles: the comparable figure for 1986 was 433 cases.

The volunteers took up an even more challenging assignment in December 1985 and again in April 1986: two tetanus injections for every girl and woman aged between ten and forty-five. Some 1.2 million women are now fully protected, along with their unborn children. During the December campaign some 917,000 households were also given two packets of oral rehydration salts and a calendar explaining how the salts can prevent diarrhoeal dehydration.

The most far-reaching campaigns of all have tackled the parasitic infections which are a leading cause of malnutrition in the Dominican Republic, especially for children. Of a total population of 6 million, 5.4 million took a deworming drug in 1984, and 3.6 million took a second dose in 1985.

By mid-1986 the volunteers of the Dominican Republic were veterans of 14 major health drives. To help them keep up the pace, the government launched a National Council for Mothers and Children in August 1985. The Council has rallied together every possible source of support – from the Ministries of Health, Education and Agriculture to the armed forces, the Church, the National Paediatrics Association, the Red Cross, universities and medical schools, and private voluntary groups.

The mass media have also played a crucial part in maintaining public awareness and demand for the volunteers' services. The National Council has distributed posters promoting breast-feeding throughout the country; and in the weeks leading up to each health campaign, the nation's press, radio and television stations carry features and advertising spots prepared by the Council. Banners at major crossroads announce the campaigns, and leaflets are given out at bus stops.

To sustain a system which relies heavily on volunteers, the health services plan and budget for the enlisting and training of new recruits every year. And by sending the volunteers to knock on every door, the Dominican Republic has solved the hardest problem of all – how to reach the poorest families.

from approximately 60% to about 30%, as over 40 nations have begun mass production of their own supplies of ORS.

For individual countries, there are few facts and figures on the percentage of parents using ORT. But surveys of varying reliability suggest that the 35% mark may already have been reached by Bangladesh, Bolivia, Burma, China, Egypt, Nicaragua and Tunisia, and that the 20% mark may have been passed in Ethiopia, Haiti, Honduras, India, Indonesia, Pakistan, the Philippines, and Thailand.[4]

'Super-ORS'

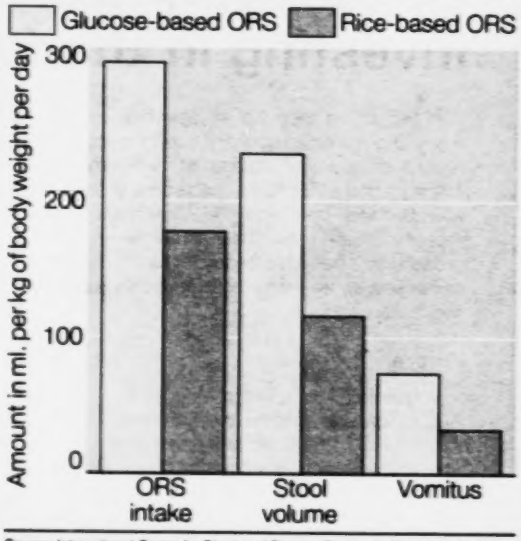
Meanwhile, continuing research into ORT is developing improved oral rehydration solutions which may make the therapy both more effective and more marketable. Scientists at the International Centre for Diarrhoeal Disease Research, Bangladesh, for example, have reported that using cooked rice powder instead of glucose produces a version of ORS which reduces the duration of the disease by approximately 30%, reduces stool volume by 40%, and reduces vomiting by as much as 60% (fig. 12).[5] If these findings are confirmed in field trials, then 'Super-ORS' could become a doubly important breakthrough. Frequent diarrhoeal disease is also a major cause – some would say *the* major cause – of child malnutrition (pages 64 to 81). A rehydration therapy which could also help to maintain the child's nutritional level by reducing the diarrhoea and restoring normal appetite could therefore help to break into the self-perpetuating cycle of malnutrition and illness which now circumscribes the lives of so many young children.

Quite aside from this nutritional advantage, the new cereal-based ORS could also be a breakthrough in *promoting* the whole idea of oral rehydration therapy. One of the main problems in marketing ORT is that it is not a 'cure' in the sense of sharply reducing the duration of the illness or the volume of the stool output (ORT prevents or treats dehydration, restores energy and appetite, and helps the body itself to overcome the cause of the diarrhoea). But parents are naturally anxious to also find a way of actually stopping childhood's most common illness. A 'Super-ORS' which visibly helped to reduce the diarrhoea and vomiting as well as invisibly preventing dehydration would therefore be a more marketable as well as a more effective therapy. In total, twelve different kinds of 'improved ORS' are now undergoing field trials in research institutes in Bangladesh, Burma, Chile, Costa Rica, Egypt, India, Indonesia, Kenya, Nigeria, Peru, the Philippines, Rwanda, Senegal, Thailand and Venezuela.

In this case, continuing research on ORT is clearly important to its advance. But the most important challenge remains the finding of ways and means to empower literally millions of parents with *existing* knowledge about ORT – and the confidence to use it – in order to prevent the deaths of more than 3 million children every year.

Fig. 12 Efficacy of rice-based ORS

In a trial in Bangladesh, an oral rehydration solution made with 50 grammes of rice-powder per litre (instead of the usual 20 grammes of glucose) significantly reduced the amount of ORS required as well as the amount of diarrhoea and vomiting.



Source: International Centre for Diarrhoeal Disease Research, Bangladesh, 1985.

Donor countries: investing in the future

In budgeting their aid for developing countries, many industrialized-country governments have a record of placing children's well-being at the forefront of their concern. And some of them – notably Canada, Italy and the United States – have recently made major adjustments in their approach, to take advantage of the newly available opportunities for promoting children's survival and healthy growth.

Canada

In October 1985, Prime Minister Brian Mulroney of Canada was among the first heads of government to sign the Declaration of commitment to universal immunization (see panel 8). Only a week earlier, his government had announced a special supplement to its assistance programme – $18 million for vaccination programmes in poorer countries of the Commonwealth. Another $7 million was added later, for immunization in French-speaking developing countries.

Safeguarding the future of Africa's children is also an underlying element of Canada's Africa 2000 Fund, launched in May 1986. The Fund is allocating $109 million to programmes which will benefit children by protecting their mothers' health, raising their incomes, and improving agriculture.

Italy

In 1979 the government of Italy devoted only 0.08% of its gross national product to international development aid. By 1985 the proportion had risen fourfold. Much of that rise was spurred by growing concern about the world-wide toll of preventable child deaths.

Accordingly, Italy in 1985 pledged $15 million to the 'bridge for peace' health plan in Central America (see panel 6), and signed a letter of intent with UNICEF to spend more than $100 million over five years to help up to 29 countries, mostly in Africa, immunize their children.

By mid-1986, vaccination programmes had gone into action in 18 African countries with Italian funds of $33 million. Some examples:-

- Senegal launched the first phase of an accelerated immunization programme from 1 to 5 October 1985. Well over 87,000 under-fives were vaccinated in ten cities.
- In Somalia, nursing students and community leaders in the cities of Mogadishu and Hargeisa helped to raise vaccination coverage in under-fives from less than 20% to close on 80%.
- In Addis Ababa, neighbourhood immunization drives have lifted the vaccination rate for under-twos above 70%. Italian funds and expertise are helping to extend the approach to four more cities.

United States

The United States Agency for International Development (USAID) finances about 10% of international aid for health. The agency's funding for child survival has quadrupled since the United States Congress first assigned $25 million to a special Child Survival Fund for 1985: for 1986, Congress allocated a further $37.5 million to the Fund along with $60 million for other child survival activities.

USAID currently supports oral rehydration and vaccination programmes in over 50 countries including:-.

- Immunizing children and mothers in 12 African countries, under a five-year, $45 million programme set up in 1984.
- Supporting the promotion of immunization and oral rehydration in Nigeria, by a grant of nearly $14.5 million which includes $6 million for UNICEF projects.
- Improving nutrition in Cameroon and Ghana, using techniques for growth monitoring and nutrition education developed in Indonesia.

Commercials

One set of answers to that question has already been suggested by the nation which has so largely succeeded in doing just that. In the early 1980s, fewer than 2% of Egypt's parents knew about ORT. Today, almost all the nation's parents know about it and more than three-quarters are using it.

Follow-up surveys have yielded some basic facts on *how* parents came to know about the new therapy. Approximately 30% of Egyptian parents heard about ORT via the radio and approximately 80% learned about it from national television commercials which were shown up to six times a day (fig. 13). The 21 different 'ORT advertisements' all featured Karima Mokhtar, a well-known Egyptian actress.

Two-thirds of the mothers were also shown how to use ORS by doctors or by health centre staff after a massive nation-wide effort to retrain over 19,000 physicians, nurses, and pharmacists.* Curricula were changed in teaching hospitals and university medical schools; seminars were convened to educate health professionals; and over 100 oral rehydration training units were set up throughout the country.

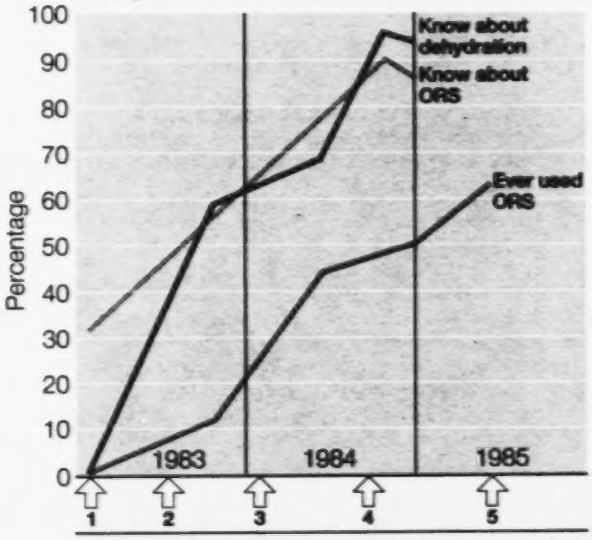
As the mass media and the health services boosted demand, the Egyptian Health Ministry simultaneously boosted supplies by making sachets of ORS available through all 4,000 government health centres and almost all of the country's 6,530 private pharmacies. Today, the government-owned ORS factory is mass-producing 75 million 200-millilitre sachets a year (under the name of *Rehydran*) and running at a profit. In all government health centres a plastic measuring cup and spoon are given free to all mothers with their packets of ORS.

In briefest outline, this is how ORT has been put at the disposal of the vast majority of Egypt's parents.

In drawing lessons from this first nation-wide experience, it is obviously important to bear in mind that Egypt, despite its relatively low per capita income of $700 per year, is not a typical developing country. Almost 90% of its people have access to television, and almost 100% live within reasonable distance of health centres staffed by qualified doctors. A combination of mass-media messages and health service retraining could therefore be expected to reach the majority of the nation's parents.

Fig. 13 The promotion of ORT, Egypt, 1983–1985

Changes in knowledge of dehydration and ORS, and in use of ORS, by media intervention and ORS availability in pharmacies



1 Feb '83: Baseline survey
2 July '83: Alexandria radio campaign & new ORS in private pharmacies in Alexandria only
3 Feb '84: 1 month national TV campaign
4 Sept '84: 1 month national TV campaign and new ORS in private pharmacies
5 June '85: 5 month national TV campaign; ORS in 98% of all pharmacies nationally

Note: The National Control of Diarrhoeal Diseases Project did not begin to promote ORT nationally until February 1984. 1983 was used to test the project's approach and new ORS packets in Alexandria. Therefore, the population percentages shown in 1983 are all from Alexandria.

Source: "The National Control of Diarrhoeal Diseases Project: an innovative and effective program", The Ministry of Health, National Control of Diarrhoeal Diseases Project, Cairo, October 1985.

* There is, however, disturbing evidence that a majority of doctors are continuing to also prescribe largely ineffective anti-diarrhoeal drugs which are costly to the poor.

Sudan: the Khartoum example

As the Sudan gradually recovers from the worst drought of the century, its health authorities have turned their attention to another scourge of the nation's children – vaccine-preventable diseases.

With fewer than 10% of the nation's children fully immunized, some 50,000 children are believed to die needlessly each year from measles, whooping cough, tetanus, diphtheria, tuberculosis and polio. During the worst of the famine in 1984 and 1985, six times that many children, weakened by hunger, are estimated to have lost the battle with vaccine-preventable diseases.

Although the Sudan started an expanded programme of immunization in 1976, coverage has consistently lagged far behind the goals.

In 1985, the Ministries of Health and of Information, the National Child Welfare Commission and regional and provincial health authorities joined forces with leading members of the Paediatric Association, Rotary International, the World Health Organization and UNICEF, to find a solution to the problem of low immunization coverage.

It was clear that lack of promotion lay at the heart of the problem: surveys showed that 47% of parents did not know that vaccination was available, while another 27% knew about vaccination but did not realize it was important to have their children immunized.

So the organizers of the new accelerated immunization programme, launched in the Khartoum region towards the end of the year, called on every sector of society, including the schools, the armed forces and the police, to help the health services inform parents about the value of immunization.

The four rounds of vaccination, from October 1985 to January 1986, were accompanied by massive media support to boost public awareness.

While volunteers spread the word from house to house, the local radio station issued daily information bulletins and appealed to parents to bring their children to the vaccination posts. The Tagadum Theatre of Port Sudan, which had produced a successful play about immunization, was invited to perform it in different locations of the region; and the play was broadcast on national television as well.

The accelerated immunization programme was also designed to help build up the health system over the long term, to ensure vaccination services for the generations of children yet to come.

The number of immunization sites in Khartoum which serve the region has been doubled, from 76 to 152, and 340 health workers were specially trained. To cope with the increased demand, new vaccination equipment was brought in, together with new cold-chain equipment to guarantee proper storage of the vaccines.

By the end of the year, some 52% of the region's 71,000 children under one were fully immunized against all six diseases; 82% had received at least the first of the three doses against polio and against diphtheria, whooping cough and tetanus. The programme also reached nearly as many children aged between one and three. Evaluation results have shown that 89% of parents now know that vaccination is available and understand its importance for their children.

The Khartoum region has set the model. In 1986 a national accelerated programme of immunization was launched, with funding from Live Aid and from the governments of Canada, Italy and the Netherlands. It was officially inaugurated in the Central region and is expanding to reach four more regions during the course of the year. Despite the continuing civil war, the goal is to cover the country in the next four years, so that every Sudanese child will be fully immunized by 1990, and every mother-to-be immunized against tetanus for her own and her child's protection.

When the Sudan achieves and sustains that goal, it will be vaccinating nearly a million under-ones and over 1.1 million women every year.

But the principle behind Egypt's achievement is of broader validity. The news about ORT cannot be expected to seep naturally outwards from the centres of science. To take ORT out of the laboratories and put it into the hands of the people demands a conscious communications effort on a massive scale.

Other countries are also now beginning to apply that principle in their own ways. In *Bolivia*, 6,500 community oral rehydration units have been opened, 10,000 volunteers have been recruited and 4,500 doctors, nurses and paramedics have been trained to use and teach ORT (see panel 20). In *Indonesia*, over 700,000 volunteer nutrition workers are teaching their neighbours how to use the new therapy. In *Burma*, over 30,000 village health workers and 10,000 auxiliary midwives have been trained both to use ORT and to teach tens of thousands of parents to use it. In *Nicaragua*, 20,000 volunteers have carried the ORT message into the nation's homes and over 1,500 medical professionals have been trained to teach ORT at 365 special oral rehydration centres (the government has made ORS available to all pharmacies on condition that it is sold at a fixed price). In *India*, all 120,000 *anganwadi* workers (see panel 14) are teaching mothers how and when to use ORT, and the Red Crescent Society is training all its volunteers to promote the therapy. In *Thailand*, 457,000 village health volunteers and village health communicators are introducing ORT to all families in their own communities and ORS packets are now being sold through the nation's 6,400 health centres and 16,000 village drug co-operatives. In *Nepal*, locally produced packets of ORS are being sold through 10,000 outlets under the name of *Jeevan Jal* or 'life water'. In *Sri Lanka*, the similarly named *Jeevanee* sachets are available from all pharmacies and health workers and are about to be marketed by a company via its 10,000 street-corner kiosks. In *Bangladesh*, 1,200 field workers of the Bangladesh Rural Advancement Committee are at the mid-point of a ten-year programme to visit the nation's homes and teach ORT to 12 million mothers – backing up the effort with radio and television programmes which have already been seen and heard by almost half the nation's parents (see panel 12).*

Reaching doctors

These experiences boil down to a residue of two basic lessons. One is that imaginative strategies of mass communication are needed if all parents, not just a minority, are to be reached with the news about ORT. The other is that an equally determined effort is required to inform and involve the professional health services themselves.

Mass communication about ORT can create an awareness of the problem and a demand for its solution, and this is a necessary but insufficient condition for the acceptance of the new therapy. To put the therapy into practice, most parents will also need the active endorsement and encouragement of health workers.

For one thing, the endorsement of doctors is usually essential for the credibility of the message. The well-documented experience of Egypt and many other nations has shown that attempts to mass-communicate knowledge about health will usually fail if they receive less than enthusiastic support from the medical profession.

Secondly, the health services in most nations are an important channel, in their own right, for putting knowledge of preventive health at the disposal of a significant proportion of the population. Even if the formal health sector in most developing countries reaches only 25% to 50% of the people, that is a significant outreach – and the influence of the example it sets, and of the advice it gives, seeps much deeper into society than the level of its formal contact. A mother who takes her child to a doctor and returns home with a bottle of tablets and the advice to stop feeding for a day or two will undermine anything her neighbours may have heard about ORT and the importance of continued feeding.

* In support of all these efforts WHO has so far trained well over 5,000 managers of diarrhoeal disease control programmes all of which include training in ORT.

Today, even the formal reach of the health services is not being fully used for the promotion of new knowledge about child health. According to the World Health Organization, only about 25% of the developing world's clinics and health centres have stocks of ORS and a person trained in oral rehydration therapy.[6]

Because of the public contact they make, and the respect in which they are usually held, the health services have a major responsibility to help formulate and endorse the messages of mass communications campaigns. And in their own day-to-day work, the clinics and health centres also have an opportunity to gradually empower people with vital information about how to use today's knowledge to protect their own and their family's health. It is unforgivable today for parents not to be informed by the radio, by the television, and by the schools about basic facts of child health. It is even more unforgivable if they are also not informed of these facts by their own health services.

But today, this second prerequisite of success – the active support of the medical profession – is probably the single most important obstacle to the spread of ORT. For as the Second International Conference on ORT was told by Dr. Kenneth Bart of the United States Agency for International Development in December of 1985:-

"*World-wide the majority of physicians, community health workers, and pharmacists do not yet know about or do not yet accept oral rehydration therapy. All too many continue to prescribe drugs and advise mothers to withhold food during diarrhoea.*"[7]

Before reporting on the parallel attempt to boost levels of immunization world-wide, it is important to register this major *promotional* difference between the two most powerful of all public health technologies.

In theory, ORT ought to be much more widely available than immunization. Apart from the vaccines themselves, immunization also requires cold storage technologies, reliable record keeping, and trained vaccinators. ORT requires none of these. It can be used by all parents using ingredients found in almost all homes. But in practice, immunization is today reaching four times as many children as ORT. In part, this can be explained by the relative newness of oral rehydration therapy. But more important is the fact that all doctors and health workers are aware of the importance of immunization, whereas only a minority know that ORT is every bit as important for the protection of a child's life and growth.

Therein lies the importance of the strong support which ORT is now receiving from highly respected professional bodies such as the International Paediatric Association.*

The mass promotion of ORT therefore takes on an additional dimension in that it will also be necessary to ensure that all ranks and levels of the professional health services are practised in today's knowledge about diarrhoeal illness and oral rehydration therapy.

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* The International Paediatric Association adopted the following resolution at its 1983 congress in Manila:-

"Whereas the International Paediatric Association, recognizing that the major causes of death and disability of children are preventable and remediable, and

"Whereas there exist low-cost, highly effective health technologies for the prevention and treatment of these causes of death and disability, in particular by the use of growth charts, of immunization, of oral therapy for diarrhoea, and by the promotion of breast-feeding and safe weaning, and

"Whereas these effective health technologies can be applied on a wide scale, in the context of primary health care, employing, in particular, methods of mass communications and social organization, and

"Whereas the combination of technology, communication, and social organization makes possible a virtual child survival revolution which could reduce the toll of disease and death of children by half within the next decade,

"Therefore, be it resolved that the International Paediatric Association commits itself to partnership in this effort to so reduce childhood mortality and morbidity, and resolves to work at all levels with UNICEF, WHO and other partners to bring about a child survival revolution.

"In particular, the IPA calls upon all regional, national and local paediatric societies, and upon all individual paediatricians, to join in this effort."

At the moment, the majority of the world's health professionals are still prescribing anti-diarrhoeal drugs – over four hundred million dollars' worth every year.* Yet in almost all cases, these drugs are now known to be either useless or harmful. At the moment, a great many of the world's health professionals are still advising parents to withhold food from a child suffering from diarrhoea. Yet food and fluids are exactly what is needed to help maintain nutrition, speed recovery, and prevent dehydration.

In other words, a significant percentage of the world's doctors are today prescribing the wrong treatment for one of the world's most common illnesses.

* Diarrhoeal diseases account for approximately 30% of all child hospital admissions and about 40% of all out-patient visits to clinics and health centres in the developing world. If all those hospitals and health centres were to use ORS to treat 90% of those cases – instead of anti-diarrhoeal drugs and intravenous therapy – then the savings would be more than enough to pay for nation-wide ORT promotion programmes and enough ORS to treat every episode of childhood diarrhoea. In other words, a significant improvement in child health could be brought about without increasing overall expenditures. "*By replacing bad therapy with good therapy*," says Robert Hogan, Programme Management Officer of WHO's Diarrhoeal Diseases Control Programme, "*ORT could often pay for itself.*"

Towards universal immunization

Oral rehydration therapy could prevent approximately 20% to 25% of the 14 million deaths a year among the world's under-fives. Another 25% could be prevented by immunization against the six most important vaccine-preventable diseases (fig. 10).

In the mid-1970s, fewer than 5% of the developing world's children were receiving even a first dose of vaccine against polio, diphtheria, whooping cough or tetanus. Today approximately 40% are fully immunized and that figure is now rising rapidly.* In the last two years, seventy-seven countries – with over 90% of the developing world's children – have informed the Secretary-General of the United Nations of their intention to immunize at least 80% of their children by the UN target date of 1990.**

* Measles vaccination is an important exception, reaching only about 26% of the developing world's children even though the disease is responsible for approximately 55% of all vaccine-preventable deaths.

The principal problem of measles immunization is timing; immunization before the age of 9 months runs the risk of the vaccine being rendered ineffective by the natural antibodies acquired through the mother. Immunizing later than 9 months means that a significant proportion of children will contract measles in the interval between the wearing-off of natural protection and the introduction of the vaccine. The most effective compromise is immunization as close to the age of 9 months as possible.

As against this, measles immunization has in its favour the fact that only one dose is needed and that a measles vaccine has now been developed which is more heat-stable.

** The 77 countries are Afghanistan, Algeria, Angola, Bangladesh, Belize, Benin, Bhutan, Bolivia, Botswana, Brazil, Burkina Faso, Burma, Burundi, Cameroon, Central African Republic, Chad, China, Colombia, Congo, Democratic Yemen, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Ethiopia, Gambia, Ghana, Guatemala, Guinea, Guinea-Bissau, Haiti, Honduras, India, Indonesia, Iran, Iraq, Jordan, Kampuchea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mauritania, Mauritius, Mexico, Mozambique, Nepal, Nicaragua, Nigeria, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Rwanda, Saudi Arabia, Senegal, Sierra Leone, Somalia, Sri Lanka, Sudan, Suriname, Syrian Arab Republic, Thailand, Togo, Turkey, Uganda, United Republic of Tanzania, Viet Nam, Yemen, Zaire, and Zimbabwe. Forty-six of these countries have also subsequently signed the Declaration of commitment to universal immunization by 1990 (panel 8).

Ecuador: the pulse of survival

The church bells tolled in every parish of Ecuador on 26 October 1985, calling parents not to worship but to safeguard their children's lives. Ecuador's new child survival programme was under way.

In the face of natural disasters and economic recession, Ecuador's children have been the first to suffer. Over a third of families live below the poverty line and two out of five children are malnourished, leaving them more vulnerable to infections. Diarrhoea and vaccine-preventable diseases account for nearly half the yearly toll of 30,000 deaths of young children: yet in 1984 only 20% of families were using oral rehydration salts for diarrhoea, and only 50% of children under five were fully immunized.

In response, Ecuador has launched a national programme of 'pulse' campaigns, three times a year, to boost the ability of the health services to reach every family. The programme combines vaccinations, oral rehydration salts to prevent dehydration, and growth charts for teaching mothers about child nutrition.

Under the leadership of the First Lady, support came from every quarter – the Ministries of Health, Social Welfare and Education, the National Institute for the Child and Family, the Red Cross, the Catholic Church, international donors, the armed forces, the national association of medical schools, and the governors of all Ecuador's 20 provinces.

The first need was to upgrade the skills of every volunteer. The Ministry of Health trained 3,000 health workers and other personnel. The Conference of Bishops briefed 660 community leaders. In the largest teaching programme of all, the Ministry of Education organized a week's instruction for 900 supervisors, 34,500 teachers, and 150,000 senior high-school students.

A mass-media campaign started months before the first pulse, set for 26-28 October. Newspapers and magazines, radio and television, posters, banners and flyers took the message nation-wide. Children all over the country were soon singing the programme's catchy theme song. Parish priests preached the benefits of the child survival measures in their Sunday sermons, and the high-school students visited homes to explain the strategies to parents.

For the first pulse the organizers set what they considered a realistic target – vaccinating 257,000 under-fives at 3,000 temporary vaccination posts. In the event 532,000 children turned up, over twice as many as expected. More than 621,000 packets of oral rehydration salts were given out, together with a one-litre plastic measuring bag. And 484,000 children also received growth charts carrying a vaccination schedule and information about nutrition.

Within two weeks the demand for oral rehydration salts from clinics and pharmacies had doubled. A survey two months later found that 75% of households were now familiar with the salts, and 50% had used them. More than half had learned of the treatment from the high-school students.

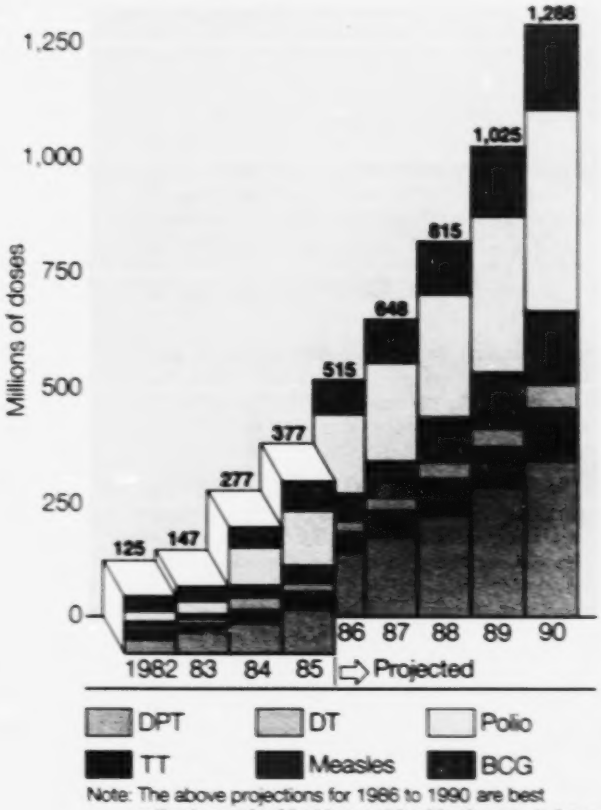
Publicity for the second pulse, on 25-27 January 1986, started up only a week beforehand. Attendance fell. Just under 320,000 children were vaccinated, and 206,000 growth charts were handed out.

So extra efforts were made for the third pulse from 21 to 23 June. The mass-media campaign was stepped up well ahead of time, and emphasized a special 'graduation certificate' for children who completed the full course of vaccinations. Parents were promised that every child under two would be weighed at the vaccination post.

The turn-out rose again. Over 334,000 children were vaccinated, over 436,000 packets of oral rehydration salts were distributed, and nearly 145,000 under-twos were weighed.

Ecuador's pulse campaigns are due to continue until 1988, when the health services will take over. Already, at a cost of less than $2 a child for each pulse, the experience is being built up to promote the healthy growth of the children of Ecuador.

Fig. 14 Vaccines supplied by UNICEF, 1982–1990 (projected)



Note: The above projections for 1986 to 1990 are best estimates and subject to considerable changes in future.

DPT = Diphtheria, Pertussis (whooping cough), Tetanus
DT = Diphtheria and Tetanus
TT = Tetanus Toxoid
BCG = Tuberculosis

Source: UNICEF.

In sum, the 1980s could one day be seen as the decade in which the great majority of the world's children were immunized.

Reflecting these achievements and commitments, the number of doses of vaccine supplied by UNICEF to over 100 developing countries has trebled from 125 million in 1982 to 377 million in 1985, and is projected to reach over 1 billion by 1990 (fig. 14).*

As a result of this acceleration, vaccines are now saving the lives of approximately one million children a year in the developing world (fig. 10). If the 1990 target for universal immunization is met,** then the lives of an additional 3 million children will be saved each year, effectively bringing to an end the reign of six major infectious diseases – diphtheria, pertussis (whooping cough), tetanus, polio, measles and tuberculosis – diseases which throughout history have levied a cruel tax not just on the lives and the limbs of millions of children but on their nutritional status and normal growth (fig. 15).

Supply

The reason for this surge forward in immunization is not new vaccine technology. With the important exception of a more heat-stable measles vaccine, most of today's technology was available in the early 1970s. More recently, it has been two non-technical developments which have paved the way for the great advance.

The first is the increased capacity of governments and health ministries to organize the supply of vaccines in the right quantities in the right place and at the right temperature. Over the

* UNICEF is the largest international supplier of vaccines, to the standards laid down by WHO's Expanded Programme on Immunization. Local production of vaccines is set to rise significantly over the next few years in countries such as China, India, and Pakistan.

** In practice no country, even in the industrialized world, has ever achieved 100% immunization of its children. 'Universal' immunization is therefore best interpreted as implying the ideal that no child should be denied immunization against tuberculosis, diphtheria, whooping cough, tetanus, polio, and measles. It is, however, generally agreed that when immunization coverage reaches a figure of 80% or more, then disease transmission patterns are so severely disrupted as to provide a degree of protection even for the remaining children who have not been immunized (providing that the unimmunized are scattered evenly throughout the population, and not concentrated in areas with low or no vaccination coverage).

It is also important that children are immunized during the first year of life and that levels of immunization are sustained so that each new generation is protected.

Mozambique: the Maputo model

In little over a decade of nationhood, Mozambique has faced recurrent drought and natural disaster, economic recession, and externally-supported armed insurgency. Yet the national vaccination programme is gaining ground.

Mozambique adopted a policy of primary health care soon after independence in 1975, and launched its first national immunization campaign in 1976. A few years later, drought and war had brought progress nearly to a standstill. The rains have since returned. But health centres have been destroyed, trained health workers are scarce, and vaccination coverage has slumped below 25%.

Expressing his government's determination to overcome these set-backs, the late President Samora Machel declared in November 1985 that over 90% of one-year-olds in Maputo, the capital, would be vaccinated against six killer diseases before the end of 1986. The Maputo programme is to serve as a model for the rest of the country.

The goal is already in sight: the city's health workers have been calling at people's homes for three years now, seeking out children and pregnant women who have missed their shots or children who have not been weighed recently, and referring them to the nearest health centre. In 1986 the health workers began sweeping through the whole city. By June they were half-way towards the goal of protecting 90% of Maputo's 34,000 one-year-olds. By August they had visited door to door in 62 of the city's 98 *bairros* (wards).

Achieving the full goal entails reaching the most elusive of the city's families – the poor, the illiterate, and the many recent immigrants who have fled the embattled countryside.

So Maputo's health authorities are now building permanent alliances for informing every family. The primary schools are teaching children the benefits of vaccination and other health measures. As the door-to-door campaigns open in each *bairro*, volunteers from the party, the secondary schools, the national youth and women's organizations and the Mozambican Red Cross work side by side with the *bairro* leaders and health personnel to encourage parents to bring their children. The activities are heralded by posters and pamphlets, radio and television broadcasts, loudspeaker vans and announcements at sporting events.

At the same time, an accelerated vaccination programme in the southern province of Inhambane, one of the hardest hit by drought and war, has pioneered an alternative approach for rural areas.

The programme started in May 1985 with assistance from UNICEF and Save the Children Fund. Health personnel trained local party workers and volunteers from the national women's association and Mozambican Red Cross to help the mobile vaccination teams and motivate parents to bring their children for immunization. Since the times and places for vaccination could not be publicized for fear of attracting armed attacks, a 'silent' communications strategy was devised which promoted vaccination through community organizations, the party structure, primary schools, radio and leaflets. The volunteers and mobilizing teams went house to house only one or two days beforehand, to tell families when and where the vaccinators were due.

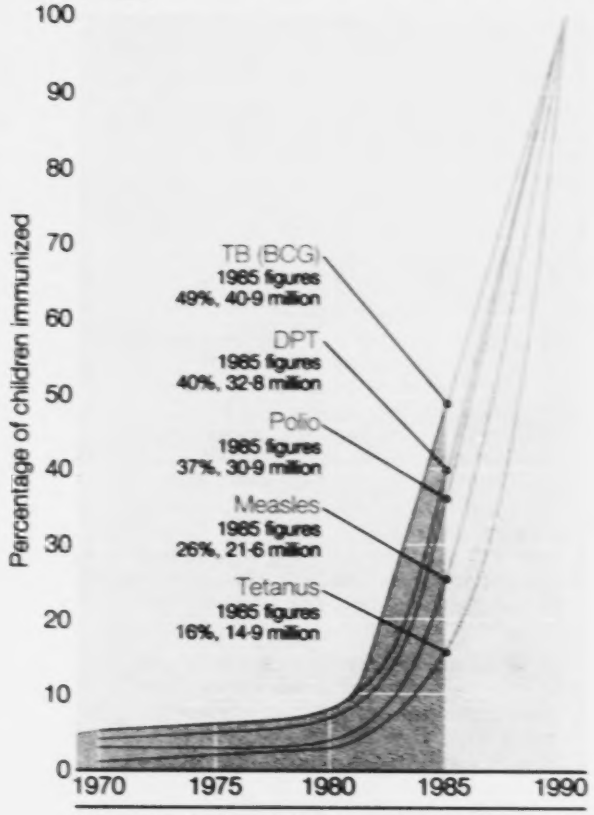
By December, the 'silent' strategy was well established in nine districts of Inhambane, and the teams had reached 68% of one-year-olds in the areas they covered. In early 1986 the teams fanned out to enter all of Inhambane's 12 districts. In July they widened their range: vaccination is now the starting-point for monitoring children's growth and for teaching mothers about oral rehydration therapy.

The lessons learned in Maputo and Inhambane are helping to shape the nation's approach to health care. By 1990 Mozambique expects to have immunized 50% of children in rural areas, and 90% of children in the major cities.

Fig. 15 Immunizing all children by 1990, progress achieved and progress required

Immunization of 12 month-old children against tuberculosis (BCG); diphtheria, pertussis (whooping cough) and tetanus (DPT); polio*; and measles**; and of pregnant women against tetanus (TT***) in developing countries****.

The darker green tint shows the actual rate of progress (1970–1985) in immunizing children (under one year) in the developing world. The lighter green tint shows the required rate of progress (1985–1990) if the target of universal immunization is to be met by 1990. 1985 is the latest year for which data is available.



* The usual number of doses is three. In some countries, however, only 2 doses of DPT and polio vaccinations are given.

** In some countries measles vaccinations are given after 12 months.

*** Two tetanus injections are required in pregnancy to protect against tetanus of the newborn which accounts for the vast majority of infant tetanus deaths in the developing world. Tetanus coverage therefore applies to pregnant women.

**** Excluding China – the latest WHO estimates for coverage in developing countries including China are as follows: BCG 49%; DPT 43%; polio 43%; measles 32%; and tetanus 13%.

Source: WHO and UNICEF estimates.

last few years, for example, WHO's Expanded Programme on Immunization (EPI) has trained over 18,000 professionals in the management of immunization programmes and the maintenance of vaccine cold chains. And although management problems still restrict vaccine availability on too many occasions, it is now possible for almost all countries to supply enough vaccine to reach and maintain universal immunization.

Put at its simplest, *supply* is no longer the main obstacle to vaccinating the world's children. If the will is there, the resources can be found. The Director of the Task Force for Child Survival, Dr. William Foege,* has said this year that "*no country in the world today with a serious intent to immunize its children will not have the resources available*". The same view has also been expressed by the Director of WHO's Expanded Programme on Immunization (EPI), Dr. Ralph Henderson, who has also said this year that "*no committed country with a realistic EPI plan of operations needs to be constrained by a lack of vaccines, cold-chain equipment, or supplies*".[1]

In the mid-1980s, the greatest challenge in immunization is not the ensuring of supply but the creation of demand.

Demand

For a mother in the developing world, getting a child immunized usually means giving up half a day's work and wages, travelling on foot or by bus carrying at least one young child, queueing in the sun for perhaps an hour or more, getting back

* The Task Force for Child Survival was set up in March 1984 by WHO, UNICEF, the World Bank, the United Nations Development Programme, and the Rockefeller Foundation, "*not only to immunize all the world's children as an impetus to primary health care but also to promote other effective means – ranging from oral rehydration to child spacing and family planning – where and when opportunities present themselves, so as to reduce morbidity and mortality in this most vulnerable of all groups*".[2]

Bolivia: mobilizing a million people

Since 1983, Bolivia has been mobilizing up to a million people – a sixth of the nation's entire population – for 17 major drives to safeguard children's survival.

Beset by the worst economic crisis in the western hemisphere, and faced with a difficult terrain ranging from high plateau to tropical lowlands, the regular health services cannot reach more than a quarter of the population, and child mortality is the highest in South America. Every year over 50,000 children – nearly one in five – die before reaching their 5th birthday. Diarrhoeal dehydration and vaccine-preventable diseases head the list of causes.

In February 1983, the Ministry of Health determined to halve the death toll; and as a first step it called on every organized grouping of society to help give oral polio vaccine to the nation's children. To spearhead the drive, 'people's health committees' were established throughout Bolivia, each headed by a volunteer 'people's health representative'. The mass media, trade unions, neighbourhood councils, churches, mothers' clubs, voluntary agencies and associations of health professionals rallied to the cause: between late 1983 and early 1984, 70% of children in rural areas and 90% in the towns received at least one dose of vaccine.

A second campaign in 1984 to immunize children against measles reached half of Bolivia's more than a million under-fives; a 1985 campaign against diphtheria, measles and whooping cough, though hindered by a general strike, reached a quarter of a million under-threes.

To distribute oral rehydration salts and teach mothers how to forestall diarrhoeal dehydration at home, 6,500 oral rehydration units have been set up across the nation, most of them run by people's health representatives. Campaigns to popularize the therapy have used radio, television, rural theatre groups and wall murals to back up the work of the units.

Other health drives have tackled a wide range of children's problems – treating the parasitic diseases that undermine their growth, shielding them against malaria, immunizing them against yellow fever, and briefing their parents on how to manage acute respiratory infections. In the many regions of Bolivia where iodine deficiency is prevalent, mothers and children have been given iodized oil injections, which provide two or three years' protection.

Three years on and after a major shift of government, Bolivia's health drives are an established complement to the regular health services. Bolivia's most recent campaign – its seventeenth – promoted oral rehydration as well as giving vaccinations against five killer diseases. The drive started in isolated mountain areas on 8 June 1986 and reached its climax in the cities on 22 June.

The summons to vaccination went out in Spanish, Quechua and Aymara to every corner of the nation, carried by radio jingles, television spots and puppet shows, posters, flyers, newspaper features, street fairs and street theatre performances. The Catholic Church, police, armed forces, and national and international voluntary agencies helped the people's health representatives to organize the vaccination sessions. At the end of the two weeks, more than half a million under-threes – just over 70% – had received vaccinations against polio, measles, and diphtheria, whooping cough and tetanus.

The World Health Organization reported in late 1986 that the number of Bolivian children who complete the three doses against polio before their first birthday has more than doubled, from 14% in 1980 to 30% in 1985. The number of under-ones with the three doses against diphtheria, whooping cough and tetanus has tripled, from 11% in 1980 to 33% in 1985. Since Bolivia started mobilizing for health, the demand for oral rehydration salts has soared to 2.5 million packets a year; the incidence of measles in the capital, La Paz, has dropped by more than 75%; and in the last three years, the national health authorities have not reported a single case of polio.

home in time to catch up on the domestic chores, putting up with the usual slight fever and crying which keeps the family awake at night, and justifying to her husband and his mother why all this lost time and money is necessary on three or four separate occasions for a child who is not even sick.

To create demand in this context means making vaccination available at times and places convenient to working parents. Even more important, it means empowering parents with information not only about the date and time and place of immunization but with the knowledge that a series of vaccinations, requiring three to five visits, is essential to protect the life and healthy growth of their children.

If parents know that, they will make the effort. If they do not, then the typical pattern will be that 50% to 60% of infants will be brought for the first vaccination and considerably less than half of those will come back for the second and third. In 81 immunization programmes surveyed with the assistance of WHO in 30 countries, the average drop-out rate between the first and third shots of DPT vaccine was almost 40%.[3]

It is here that most immunization programmes have fallen short in the past. And it is here that the breakthrough is now being made.

The nations which have doubled and trebled their immunization levels over the last five years are the nations which have found new ways and means of increasing both the availability of, and the demand for, immunization services. They are nations where it has been decided that it is simply not enough to provide vaccination services every second Monday of the month in a limited number of health centres and to advertise the fact on posters which will be seen by only 20% of the people and read by even less. They are nations where a high-level political decision has been taken to immunize all children as a matter of national priority. And they are nations where all possible delivery and communications resources have been mobilized to achieve that aim.*

In the case of Colombia, first discussed in detail in this report two years ago, a doubling of immunization coverage to over 60% was achieved in less than twelve months following a presidential statement that the low rate of immunization was a matter for national shame. Following that announcement, a national vaccination crusade was launched which in twelve months immunized almost a million children by involving not just the health services but the President and several former Presidents, 60,000 community volunteers, 13,000 Red Cross volunteers, 200,000 school teachers, 2,000 parish priests, 10,000 temporary vaccination posts, dozens of banks and private corporations, the newspapers of both government and opposition parties, and the kind of television and radio coverage normally reserved for presidential elections.

The Colombian vaccination crusades were closely watched by observers from Burkina Faso, El Salvador, and Turkey, all of which have since doubled or trebled their immunization coverage (see panels 9, 21, and 4).

Other nations have pioneered similarly enterprising new methods of reaching out to the majority. In the Dominican Republic, for example, 20,000 volunteer vaccinators are using the national housing-census maps to identify and visit every home with young children. As a result, over 80% of the nation's under-fives are now immunized against polio and by the end of 1986 over 80% will have been immunized against all the main vaccine-preventable diseases (see panel 15).

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* In warning that the 1990 goal for 'universal' immunization "*will not be achieved without continuing acceleration of national programmes*", the thirty-ninth World Health Assembly noted that the goal could be achieved "*through collaboration among ministries, organizations and individuals in both the public and private sector to create effective consumer demand and ensure that this demand is met*; adopting a mix of complementary strategies for programme acceleration; and ensuring that rapid increases in coverage can be sustained through mechanisms which strengthen the delivery of other primary health care interventions."

The Assembly also noted "*with appreciation the increased international support for immunization programmes being provided particularly by the United Nations Children's Fund and by national development agencies, private and voluntary organizations and individuals, whose collective efforts are helping to bring the immunization goal within reach.*"[4]

Central America: campaigning for child survival

In several countries of Central America, successful vaccination campaigns have sparked a comprehensive drive to improve child health.

El Salvador: the nation's immunization days made headlines in 1985, as government and guerrillas stopped fighting for three 'days of tranquility' so that teams from the Ministry of Health and the International Red Cross could vaccinate nearly a quarter of a million children.

The guns fell silent again this year. On 6 April 1986, at over 1,600 vaccination posts set up across the country, 237,000 children were inoculated against five diseases and 58,000 mothers were given injections against tetanus.

Because of heavy rains on 25 May the informal cease-fire was extended for another 24 hours to allow 140,000 children and 77,000 women to be vaccinated. In the third round on 6 July 150,000 children and 97,000 women received injections. Between January and July the health services reported no cases at all of polio or diphtheria and only 83 of measles, compared with over 12,000 cases of measles in 1984.

This year, every mother bringing her child for vaccination has been given a 'health package' containing the child's vaccination record, a growth monitoring chart and two packets of oral rehydration salts to forestall diarrhoeal dehydration.

Guatemala: within four months of taking office, the government drew up the plans for Guatemala's first immunization campaign.

In the weeks leading up to the first round on the weekend of 17 May, newspapers advertised the vaccination dates free of charge, and radio spots carried the campaign jingle to every corner of the country, both in Spanish and in Guatemala's main Indian languages.

Some 40,000 health workers and volunteers manned more than 6,000 vaccination posts over the week-end. The goal was to protect a million children under five against five diseases. When the results came in, nearly 1.2 million children had received vaccinations: the teams had reached 170,000 more than expected.

And as the organizers prepared for the second round in July, which reached 909,000 children, the government announced that it would be manufacturing its own oral rehydration salts, to combat the diarrhoeal infections which currently account for over a quarter of child deaths.

Belize intends to vaccinate well over 80% of its children and mothers by 11 December 1986 – UNICEF's fortieth birthday.

The immunization drive was launched on 3 March 1986, with vaccination teams fanning out to spend a week in each of the country's six districts. The teams reached an estimated 84% of children during the first round, bringing the national total to nearly 95%. During the third round they also gave out packets of oral rehydration salts, and showed mothers how to use them.

Honduras has run immunization campaigns for two years to boost the vaccinations provided by the regular health services. As a result, 70% of children under one, and 92% of children between one and four, are fully protected against polio.

This year's drive, launched on 24 April, carried a new emphasis on child survival. Mothers are being taught about oral rehydration as they receive their tetanus shots. And on the eve of the campaign, in a ceremony broadcast live on radio and television, a national agreement to work towards child survival was signed by Honduran President José Azcona and every government minister alongside representatives of the Church, labour unions, peasant organizations, voluntary groups, and professional bodies. All those involved with children's health – from doctors and nurses to traditional midwives and community volunteers – are being given intensive training in simple, low-cost methods of saving children's lives.

But perhaps no country has learned more from the lesson of Colombia, or added more to it, than the republic of Turkey.

Turkey

In 1985, the President and Prime Minister of Turkey made a political decision to lift the country's immunization level from 25% to 80%. Today that decision is saving the lives of more than 22,000 Turkish children a year and preventing many thousands more from becoming permanently disabled.*

The immunization of over 4 million young children against five major diseases was achieved not only by mobilizing the health services to increase the supply of vaccines but by also mobilizing the nation to create the demand for them. It was achieved by eight to ten advertisements for immunization every day on national radio. It was achieved by television stations donating $5 million in air time for immunization commercials. It was achieved by 70,000 primary-school teachers reporting back to work early to help with campaign preparations. It was achieved by setting up 45,000 immunization posts in schools, shops, homes, offices, and mosques as well as in the health centres. It was achieved by the President and Prime Minister personally immunizing children, an example followed by all 67 provincial governors and all 536 prefects who simultaneously vaccinated infants to launch the campaigns in their own provinces and prefectures. It was achieved by thousands of village heads, nurses, midwives, local health workers and teachers visiting homes to list the eligible children in their own villages. It was achieved by enlisting the support of the police and the army, the television personalities and the sports clubs, the private corporations and the Turkish Red Crescent Society, and a total of over 5,000 volunteers from 60 local Rotary clubs. Perhaps most influential of all, it was achieved by the nation's 54,000 imams delivering their Friday sermons on the theme of immunization, taking as their Koranic text "*know the value of life before death comes, and of health before illness strikes*" (see panel 4).

The Turkish campaign, which eventually reached 80% of the nation's unvaccinated children, was in turn watched by visiting health ministers and government delegations from Bangladesh, China, Egypt, Indonesia, Nigeria, Pakistan, the Sudan, the Syrian Arab Republic, Viet Nam, and Yemen. All of those countries have now announced that they will meet the target of immunizing the great majority of their children by 1990. Within one year of the Turkish campaign, Syria has vaccinated a million of its children against the six major vaccine-preventable diseases.

Space does not permit a description of the similar attempts to lever up levels of immunization coverage by similar methods in more than 20 developing nations at the present time. But across the different countries and cultures where rapid progress is being made, the common success factor is the political commitment of a nation's leadership, followed by the social mobilization of a nation's resources.

Political commitment

The first prerequisite – political commitment – has clearly reached an inflection point in the mid-1980s:-

President Hosni Mubarak of *Egypt* has declared his country's intention of immunizing all children by the thirty-fifth anniversary of the Egyptian revolution which falls in July of 1987. President Corazon Aquino of the *Philippines* has this year signed a proclamation calling for universal immunization by 1990. Prime Minister Rajiv Gandhi of *India*, as reported last year, has decided that the immunization of all Indian children by 1990 is to be the living memorial to the memory of the late Prime Minister Indira Gandhi (see panel 22). President Li Xiannian of *China* has said that 85% immunization will be

* UNICEF's representative in Turkey during the campaign, Richard Reid, has this year been awarded an honorary doctorate by Hacettepe University, Ankara, for his "*outstanding services to the Turkish immunization campaign*".

India: towards universal immunization

As this report announced last year, India's Prime Minister Rajiv Gandhi has committed the nation to immunizing all its infants by 1990. The hundreds of thousands of children a year whose lives would be saved by this achievement are to be a "living memorial" to his mother, Indira Gandhi. A progress report:-

In one of India's 420 administrative districts, a group of about fifty people are discussing ways of raising immunization coverage from 25% to 80% or more. On a flip-chart, one of the group is listing suggestions for reaching everybody with the immunization message. Most of those present are medical doctors. But they are not just enumerating health posts. So far, the flip-chart reads: 15 banks, 19 post offices, 22 sports clubs, 4 newspapers, 30 temples, 15 churches, 15 cinemas, 50 schools, 300 teachers, 50 roadside billboards, 2 markets, 4 festivals and carnivals, 8 public address systems, 75 *anganwadi* workers (see panel 14), 3 hospitals, 1 *panchayat* (village council) headquarters, 43 ex-soldiers, 12 youth groups, 4 slide projectors, 24 ration shops, and 24 tin signboards, as well as the district's army of auxiliary nurse-midwives and other primary health care workers.

This attempt to mobilize all the resources in each district, and not just its formal health services, is central to India's attempt to reach universal immunization. Since it began in 1978, the nation's Expanded Programme of Immunization has made vaccination accessible to almost every family in the nation. But in practice, only a little over half of all families bring their infants for the first injection and only about three-quarters of those come back for the second and third doses. To deepen the existing coverage will require a massive communications effort to increase the demand. That is why health planners all over India are now beginning to discuss sports clubs and local newspapers – and every other mechanism to reach people with the message about the importance of full immunization and how to obtain it.

The effort to widen the reach of India's existing immunization programme from about 25% to 80% or more is proceeding district by district on a plan designed to cover the nation by 1990. In 1985, the plan went into action in the first 30 districts and coverage more than doubled to 60% (the population of those 30 districts is almost as great as the combined populations of Colombia and Turkey). In 1986, another 60 districts are taking on the challenge. From 1987 to 1990, approximately 100 districts a year will attempt to reach 85% immunization. Meanwhile, anxious eyes will be cast back to see if the previous years' achievements are being sustained (fig. 16).

As each district begins the process, every house is visited to list all pregnant women and children under one – and to personally inform parents of the need for vaccination. That message is reinforced by television and radio advertisements, by posters and public address systems, and by all the communications resources of the district. Once demand is increased, it must then be met by increased supply, and the two must be co-ordinated in a well-managed and sustainable operation.

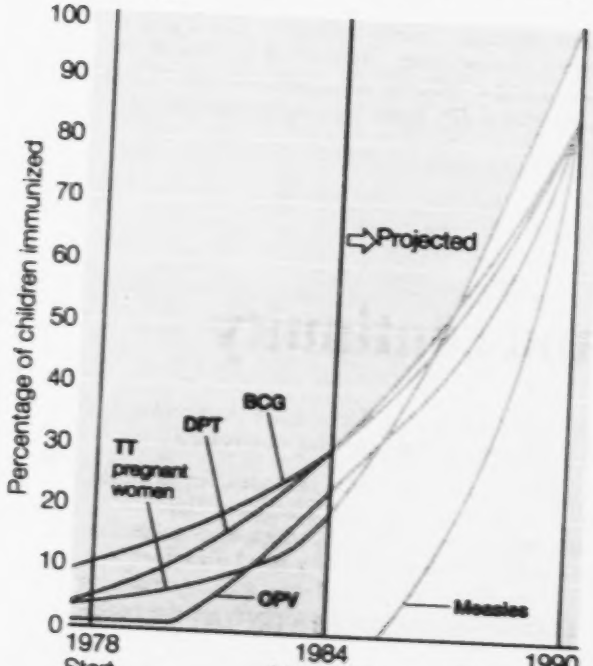
The total cost of intensifying immunization will be an estimated $750 million over five years – amounting to $5 for each fully immunized child and $3 for each woman immunized against tetanus (the aim is to immunize all pregnant women). Once 85% immunization is achieved, the annual cost of maintaining that level will be approximately $150 million – including all salaries, vaccines, organizational costs, and demand creation. The price is a small one; every day in India, more than 3,000 children die of vaccine-preventable disease and about 250 more are paralysed for life by poliomyelitis alone.

The attempt at universal immunization is an attempt to take advantage of the massive infrastructure of communications and support which India has built up over the last thirty years. For a marginal extra investment in gearing this system to universal immunization, a massive dividend may soon be paid.

achieved in all counties of China by 1990. President José Azcona of *Honduras* has called on nurses, trade unions, farming co-operatives, church leaders, and the Red Cross to help the health services achieve universal immunization by 1990 (see panel 21). In *Thailand*, the push for universal immunization by the end of 1987 is under way following a public commitment by Prime Minister Prem Tinsulanonda in September of 1985. In *Mozambique*, the late President Samora Machel vaccinated the first child in a campaign to immunize virtually every child in Maputo before the end of 1986 (see panel 19). In *Jordan*, Crown Prince Hassan has launched an immunization campaign and proposed a resolution to the Arab Council of Health Ministers calling for the immunization of all children in the Arab world by 1990. In Bolivia, 80% immunization coverage has been achieved in all urban areas by mobilizing the 'people's health committees', the church, the police, the army and the mass media (see panel 20). In *Senegal*, President Abdou Diouf is seeking to achieve universal immunization by World Health Day, 7 April 1987, which is to have immunization as its international theme. In *Nigeria*, against great odds, the government is determined to immunize 80% of the nation's children by setting up immunization posts in market-places and schools, mosques and chapels, and explaining the importance of immunization via traditional chiefs and religious leaders, politicians and schoolteachers, traditional entertainers and radio messages, press advertisements and house-to-house visits.

Fig. 16 Immunization in India, progress and projections, 1978–1990

India's Expanded Programme on Immunization (EPI) started in 1978 with the aim of immunizing all children under one by the year 1990.



Note: BCG - Against tuberculosis (1 dose).
DPT - Against diphtheria, pertussis (whooping cough), tetanus (3 doses).
TT - Tetanus toxoid: two injections needed in pregnancy to prevent tetanus of the newborn.
OPV - Oral polio vaccine (3 doses).
Measles - Introduced into the EPI in 1986 (1 dose at age nine months).

Source: *Future*, issue no. 17, 1985–86, UNICEF New Delhi.

Panels 18, 13, and 17 outline the story of the immunization efforts also being mounted this year in Ecuador, Peru, and the Sudan. In almost all cases, organized education and organized religion are proving to be two of the most important of all channels of communication. In countries such as Bangladesh, China, Colombia and Thailand, for example, child survival messages are becoming part of the standard curriculum of primary education. In Bangladesh, over 2.5 million leaflets on ORT have been distributed via the nation's primary schools – which reach more than three times as many children as the nation's health services.

But a more nebulous common element of successful campaigns is the imagination being brought to the task of creating the demand.

To mention just one recent example, a recent series of international cricket matches in Asia has been used as a means of promoting immunization messages to literally hundreds of millions of people. During the series of matches between India and Australia in Sydney, electronic score-

boards flashed the message '*Protect your child – immunize*' and 10-metre-long billboards around the grounds carried the same message, in English and Hindi, to huge television audiences throughout southern Asia. After the game, the Prime Ministers of the two competing nations, Rajiv Gandhi and Robert Hawke, signed cricket bats in a televised ceremony to promote the immunization message. Similarly, during the 1986 Asia Cup cricket tournament in Colombo, the captains of all the competing teams made television and radio broadcasts on the importance of vaccination and agreed to an immunization slogan being painted on the pitch in metre-high white letters, in three languages, to be picked up by television cameras broadcasting the games to audiences running into the hundreds of millions. In July 1986, on the occasion of an all-star soccer game featuring the best of the players from the Mexico World Cup, hundreds of millions of television viewers saw the two-language slogan '*Immunize your child*' which was both flashed repeatedly onto the screen and printed on billboards around the stadium.

In the cause of reinforcing such messages at every opportunity, Sri Lanka and Turkey have even stamped the message '*Did you immunize your child?*' as the official postal cancellation on millions of letters. Sri Lanka has also promoted immunization messages via 6 million school exercise books and 4 million plastic shopping bags. Brazil has put immunization slogans on gas and electricity bills, on pay slips and bank statements, on football programmes and lottery tickets. And dozens of countries have now issued many millions of postage stamps promoting the immunization message.

These may not be conventional ways of communicating health messages. But the conventional ways have left more than 60% of the poor world's children unimmunized and 10,000 dying every day from vaccine-preventable disease.

Social mobilization and continuity

The social mobilization approach to development objectives has its critics. Some ask, rightly, whether its achievements are sustainable, or whether levels of immunization will begin to drop when the tide of initial enthusiasm begins to ebb. Some also question whether all-out mobilization for immunization or ORT is trampling across the cause of primary health care by offering quick and spectacular results against a few selected diseases while distracting political attention and financial resources away from the longer-term and less glamorous task of building more comprehensive health care systems.

In the past, UNICEF has argued that social mobilization for the achievement of particular goals can become a cutting edge of progress towards primary health care. This year, practical results are beginning to show that, although by no means automatic, this is more than possible if it is consciously planned for in advance.

Colombia's vaccination crusades, for example, have now developed into a national child survival and development plan which aims to reduce the nation's infant mortality rate by another 30% over the next five years. Using similar strategies of mobilizing nation-wide support for the health services, the major child health problems of vaccine-preventable diseases, undernutrition, diarrhoeal disease, and acute respiratory infections will be directly attacked (see panel 10). And after the initial immunization campaigns, the then President of Colombia was able to announce that the backlog of unimmunized children had been cleared and that the primary health care centres and the normal immunization services could now cope with the vaccination of

new-borns in most parts of the country. There should therefore be no further need for national crusades.

But the vibrations of Colombia's social mobilization approach have penetrated much deeper into the health of the nation than is revealed by immunization achievements alone. According to the Colombian Health Ministry's own evaluation, for example, the crusades have helped to energize the permanent health services and open up to them a larger role in promoting the nation's health:-

"*Traditionally, the health sector has concentrated on curative health, and has tended to act passively within health organizations, waiting for patients to request its services. The national vaccination crusades ushered in a process which would ultimately break this tradition. It was a process involving a massive house-to-house search for children in need of vaccination. It was a process which gave priority to the prevention of disease, and to team-work with other institutions.*

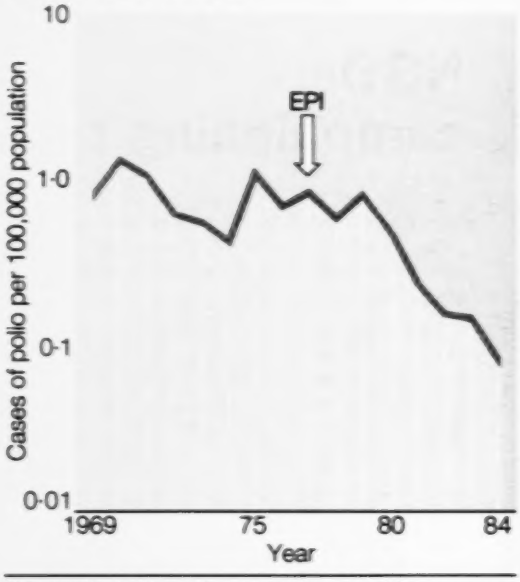
"*Because of mass-media participation, this process became a massive effort in the health education of the general public unlike any other ever conducted prior to this time. It was a process in which the health profession clearly demonstrated its potential for preventing disease and death to the public at large. And for the first time, the mass media highlighted this achievement and this capacity for preventive action. In this way the traditional approach to health has been left behind.*

"*The whole experience was a form of reawakening for the health sector. It was an opportunity for it to discover its tremendous capacity for leadership and to discover the tremendous potential of national mobilization around well-defined health objectives. The health sector itself has not failed to take advantage of these new discoveries.*"[1]

Initial push

National vaccination days have now been instituted in Bolivia, Brazil, Colombia, the Dominican Republic, Ecuador, El Salvador, Guatemala, Nicaragua, Paraguay, and Peru. Among the earliest and most visible effects is the near-eradication of poliomyelitis from South and Central America (fig. 17). More than two-thirds of the region's children have now received three doses of vaccine against the disease and the number of children being crippled by polio each year has fallen from almost 5,000 in 1979 to just 400 in 1985. World-wide, the disease still cripples over 5,000 children every week.

Fig. 17 The decline of poliomyelitis in the Americas, 1969–1984



Note: EPI is the beginning of the Expanded Programme on Immunization

Source: Progress Report on the Expanded Programme on Immunization in the Americas, April 1985.

But there is no certainty that such campaigns will automatically lead to *sustained* high levels of vaccination coverage. In Brazil, for example, there are already warning lights to indicate that polio immunization levels are falling again after the massive vaccination campaigns of the early 1980s which mobilized up to 400,000 volunteers and reached up to 20 million children.[2] After reaching almost 100% polio coverage in 1983, the level fell to 89% in 1984 and fell again to 83% in

NGOs: campaigning together

All over the world, non-governmental organizations (NGOs), both national and international, are active partners of communities and governments in their efforts to protect the health and normal growth of their children.

Their sheer number makes it impossible to give credit to all. World-wide, it has been estimated that more than 3,000 international NGOs are at work, and they mobilize more than $2.3 billion every year for assistance to the developing world.

Many international NGOs were pioneers in promoting low-cost methods for safeguarding child health such as oral rehydration, the promotion of breast-feeding and improved knowledge about weaning, and growth monitoring to watch over children's development. They come from very different backgrounds, and have found very different ways to support the cause of child survival:-

○ The League of Red Cross and Red Crescent Societies, which can call on an international membership of 230 million volunteers and health professionals, launched its Child Alive programme in 1984 to foster child survival, especially through diarrhoeal diseases control and immunization.

More than 20 national societies in developing countries are running Child Alive programmes, and many more include child survival measures in such activities as first aid training, health education, youth groups and mothers' clubs. Red Cross and Red Crescent societies have played a key role in many immunization campaigns, particularly those of Colombia, El Salvador and Turkey.

○ In February 1985, Rotary International pledged $120 million before the year 1990 to help supply polio vaccine and help defeat polio world-wide. Through its Polio Plus programme, this organization of business people has already allocated more than $23 million to protect some 118 million children against polio in 33 countries. In Indonesia alone, Rotary is supplying polio vaccine for five years to protect 33 million children; in Mexico Rotary will be providing refrigerators as well as polio vaccine to immunize 18 million children over two years.

Rotary International adopted the cause of polio vaccination on a global scale after early experiments had proven their value; the incidence of polio in the Philippines dropped by 68% within two years because of a Rotary project.

○ Over the past three years, key associations of health professionals, notably the International Paediatric Association, the International Council of Nurses and the International Confederation of Midwives, have given their moral and practical support to low-cost measures for saving children's lives.

○ In March 1986 the United States Committee for UNICEF banded together with 11 other international NGOs – they include CARE, Catholic Relief Services and Save the Children – to launch a two-year Child Survival Campaign across the United States. The aim is to bring a massive rise in public awareness of the potential for child survival.

○ Some 25 million scouts and guides all over the world are increasingly involved in working for child survival – with strong backing from the World Organization of the Scout Movement and the World Association of Girl Guides and Girl Scouts.

In Uganda, scouts and guides can now earn a new merit badge for immunization by telling families the times and places for vaccination, making signs and posters, and minding older children at the vaccination sites. In Brazil, scouts can earn a proficiency badge in child survival. In the Philippines, 3 million girl and boy scouts are working with UNICEF to promote health care and immunization. And in Sri Lanka, girl guides are assisting the nation's vaccination teams to achieve their target of universal immunization before the end of the 1980s.

1985 (fig. 18). Official estimates for 1986 are not yet in, but the signs are that corrective action is once again forcing up the level of immunization coverage. Against vaccination levels of less than 50% in 1979 (with a corresponding 2,500 cases of polio) the 1985 figures can in no way be represented as a failure. But they are a warning that continued effort is needed to maintain the coverage achieved.

Meanwhile, Brazil's immunization successes have encouraged the government to push ahead with other plans to reduce the nation's high rate of infant deaths (see panel 11). Similarly, in Egypt, success in promoting ORT nation-wide was an important factor in the government's decision to attempt universal immunization by mid-1987.

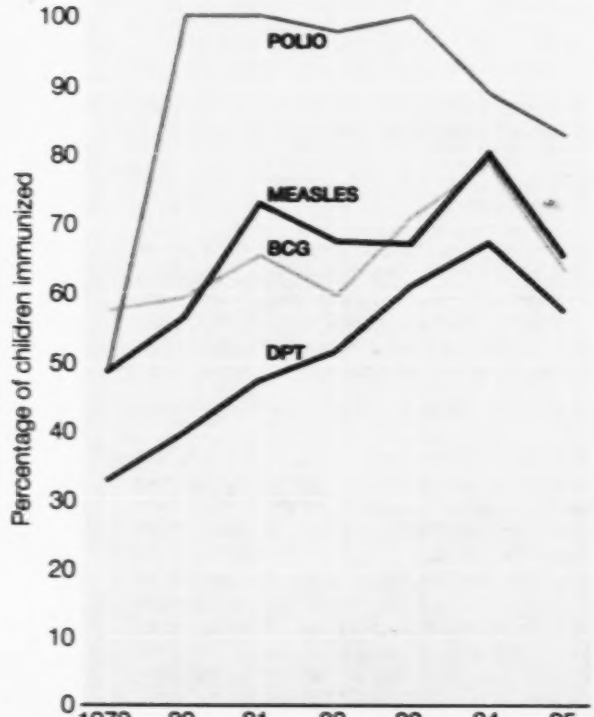
To take another example from a country pioneering this new approach, it also seems likely that Turkey will now use its immunization successes as a pathfinder to the wider field of primary health care. Six months after the campaign was launched, Health Minister Mehmet Aydin announced a strengthening of primary health care networks – "*to sustain the immunization coverage achieved and to accelerate other child survival and family planning programmes*".

"*The immunization campaign was indispensable,*" he commented, "*to give a push to be followed by permanent strengthening of the national promotive health system.*"

As in Colombia, the Turkish campaign caught up with the backlog of over 4 million unimmunized children and the new level of coverage can now be maintained by vaccinating the much smaller number of infants (1.4 million) who are born each year.

In El Salvador also, immunization levels are being sustained by the primary health care system following the three 'days of tranquillity' in 1985 and 1986 when troops on both sides of the civil war agreed to lay down their weapons so that the nation's children could be immunized. That initiative was the first test of the idea that co-operative action for child health could be a 'bridge to peace' in the troubled region of Central America. This year the seven nations of the region – Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama – have begun work on a wider-ranging five year Child Survival Project, itself part of a $1 billion regional plan called "Health: a bridge for peace in Central America" (see panel 6). Launching the plan, which aims to halve child death rates in the region, the Director-General of the Pan American Health Organization, Dr. Carlyle Guerra de Macedo, announced that:-

Fig. 18 Immunization in Brazil, progress and challenge, 1979–1985



Note: Data for 1985 are preliminary and subject to revision. Although official estimates are not yet in, a rise of two or three percentage points in polio coverage is expected during 1986.

Bangladesh: credit for women

In many parts of the developing world, poor women are powerless to improve their own and their children's lives because they lack the income and the access to loans that would enable them to set up in business or increase their productivity as the main growers of food crops. Yet studies have shown that when women do have surplus income, they give priority to their children's needs. So to raise women's earning abilities is also an investment in their children's well-being.

The Grameen Bank of Bangladesh (*grameen* means rural) has been lending to the poor, and especially to poor women, for the past ten years – and finding that the investment pays off.

"The popular belief that poor people are not bankable, that they cannot find a way to earn a living outside agriculture, that they cannot save, that they run out of ideas, that the rural power structure will ensure that the bank fails, and that women in particular will not be able to borrow, have all proved to be myths," says Professor Muhammad Yunus, the Bank's architect and founder.

"We are slowly beginning to turn the vicious circle of low income, low savings, low investment, into an expanding circle of more income, more credit, more investment, more income."

In 1976, Professor Yunus decided to test his faith in the rural poor with a credit scheme for villagers near the University of Chittagong, where he taught. He organized small groups of borrowers to share the responsibility for repayments, rather than demand traditional collateral like land. In fact, Yunus excluded applicants who owned more than 0.2 hectares of land or possessions worth twice that – thereby making poverty a qualification for borrowing rather than grounds for rejection.

The success of his undertaking attracted a grant from the Ford Foundation in 1979 and a $17 million loan from the International Fund for Agricultural Development. By December 1985, 226 branches were serving over 171,000 borrowers in 3,600 villages across the nation.

More than 112,000 of these borrowers are women, and 65% had no previous experience with banks or business. But the loans have been repaid. After nine years and $13 million in loans ranging from 200 taka ($7) to 5,000 taka ($170), there were almost no defaulters. Most women borrowers have bought livestock or agricultural tools; others have taken up trading or shopkeeping.

Between 1980 and 1985, with UNICEF assistance, over 500 women bank workers were trained to help take the Grameen Bank to the people. Some 9,500 village women have also been trained as group leaders, to help their fellow villagers manage their loans – most have to be taught to sign their names – and to introduce basic health measures to their communities. Group members are learning to read and write, digging wells, and growing vegetables to improve their children's diet. Their loan records carry a pictorial reminder of how to prepare an oral rehydration mix at home.

The Grameen Bank has inspired similar experiments, with similar results, in countries ranging from Dominica to the Gambia. In Nepal, for example, where women spend 60% of their earnings on their children or on the family's food, more than 210 women's credit groups have started up in the past five years. The women have bought livestock or seeds to grow vegetables for market, or have started small businesses. And the credit groups have become the starting-point for literacy classes, improved child care, and the promotion of immunization and oral rehydration therapy.

In the meantime, the Grameen Bank is continuing to expand: by 1993, some 2,000 branches are due to be serving almost half the country's landless poor – a quarter of the whole population.

"The child survival project in Central America is a central part of the overall plan. Each year in Central America, 100,000 children die unnecessarily from diseases virtually unknown in the developed world. This joint project, devised by the Pan American Health Organization, UNICEF, the countries themselves, and now funded by the government of Italy and the EEC, will mean new hope and new life for the children of Central America."

Planning

The key lesson to emerge from these and other campaigns of the last three years is that the results of mobilizing a nation's resources under the banner of immunization *can* be sustained and expanded and *can* contribute towards a strengthening of overall primary health care – if that longer-term ambition is planned for in advance. Reviewing the experience of immunization campaigns in the 1980s, a joint WHO/UNICEF report concludes:-

"The key word is planning. Planning for a single effort, such as a national immunization day or a series of days, is not enough. From the beginning, plans must be made with a perspective of at least three years. Launching a national or local immunization day now, hoping that the future will take care of itself, is not the act of a responsible manager. This is not to say that risks should not be taken, or that all details must be worked out and all problems solved in advance. But immunization days or other mass activities alone will rarely lead by themselves to sustainable programmes. Building such sustainability becomes much more difficult if done as an afterthought than if done as an integral part of plans from the very beginning."[1]

The campaign in Turkey again provides an example of an action planned from the beginning as the leading edge of a sustained and wider-ranging programme with the overall aim of reducing the nation's infant mortality rate by 50% in five years. No separate system was set up to bypass the existing health services. Instead, the health professionals at the core of the immunization campaign are the same professionals who are now responsible for maintaining its successes by continuing to immunize the babies born each year from now on. Since the massive effort to educate the public about immunization and child health, overall registration of children at health centres has risen and so has the morale of the health services who led the way to an achievement which has rightly become a matter of national pride. And because the campaign forged new alliances with those who made it possible to reach almost the entire population, the health services are now attempting a similar mass outreach in the effort to promote ORT, to combat diarrhoeal disease, to improve weaning, and to prevent and cure acute respiratory infections – problems which now account for the majority of child deaths in the country (see panel 4).

More will be said later in the next chapter of this report about the relationship between specific child health actions and progress towards more comprehensive primary health care. In sum, experience to date suggests that, if it is planned that way, the one can become the leading edge of the other.

Community health workers

All-out social mobilization is a way of ending, with seemly haste, the obscenity of millions of children dying from disease and malnutrition which can now be prevented at low cost.

But information – from whatever source – can only go so far. When it comes to putting new knowledge into practice in their own day-to-day lives, most parents will also need practical advice and on-the-spot help. Many mothers, for example, need individual help if they are to persevere against the sometimes difficult problems encountered in breast-feeding. Many parents will also need personal guidance and reassurance if they are to successfully space their pregnancies. Almost all mothers, to begin with, will need a practical demonstration of how and when to use oral rehydration therapy. Many

India: reaching the nation

By a crude reckoning, it could be said that more than a quarter of the problem of world poverty is to be found in just one country. Whether the issue is diarrhoeal deaths or vaccine-preventable disease, low birth-weight or malnutrition, infant death or childhood disability, nearly 30% and sometimes more of those affected live in India (fig. 19).

But since independence in 1947, India has built a nation with a capacity for social development which could surprise the world over the next two decades.

In industry, India has moved into the top ten of the world's manufacturing powers. In agriculture, food production has risen faster than population growth and most harvests now yield a surplus of basic grains. In social development, a massive infrastructure is now in place – capable of reaching out to inform and support the great majority of India's families in improving their health, nutrition, and productivity.

Each of the 5,100 'development blocks' which make up the nation, for example, now has an administrative structure, including usually two primary health care centres with an average of eight subcentres each. In manpower, the nation has over a quarter of a million qualified allopathic doctors, and over a million trained community health workers. In education, 80% of India's children now at least start school and 90% have primary education available within one kilometre of their homes. Radio reaches about 90% of the population and television is already in 10% of homes.

Adding to this capacity are several social development programmes which have grown to the point where they are now serving a significant percentage of the population. The Integrated Child Development Services scheme (see panel 14), for example, provides basic health care and pre-school education to a fifth of the nation's children in need. Similarly, the Programme for the Development of Women and Children in Rural Areas serves over 300,000 rural women and is scheduled to double its coverage in three years.

In other words, if the government of India decides to try to achieve a particular development aim it now has an administrative and communication system which gives it a realistic chance of success.

The results are already visible. In little over twenty years, infant mortality has fallen by 30%, life expectancy has risen by 40%, and the birth rate has been brought down by approximately 25%. In only five years (1980 to 1984) the number of villages without safe water supplies has been reduced from an estimated 230,000 to about 40,000 and Indian manufacturers are now producing over 150,000 village water pumps every year.

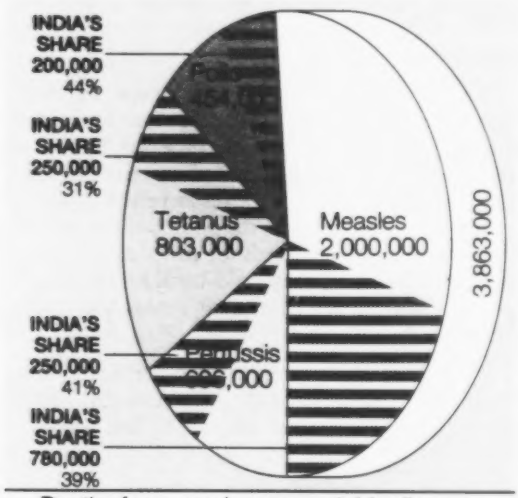
The government's goals for the year 2000 – goals made practicable by the system now in place – include:-

- Halving infant deaths (to 60 or less per 1,000 live births).
- An average of two children per family (nearly 23 million babies are born in India every year – more than in the whole of Latin America and almost as many as in the whole of Africa).
- Halving the number of women who die in childbirth or of 'maternal causes'.
- Significantly reducing the 30% incidence of low birth-weight and child malnutrition (emphasizing prevention rather than rehabilitation).
- Primary education for all and eradicating illiteracy (with a special effort to reach illiterate women and to prevent girls from dropping out of school).
- Safe drinking water for all and basic sanitation for 50% in urban areas and 25% in rural areas.

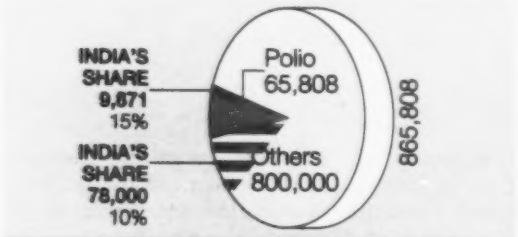
UNICEF's assistance in achieving these goals gives special emphasis to immunization by 1990 (see panel 22), the promotion of universal knowledge about diarrhoea management and oral rehydration, and the prevention of malnutrition.

parents will also need to be sought out and reminded about vaccinations (just as they are in industrialized nations). Most will need individual advice and explanations about when to supplement breast-feeding with other foods, about how to use what they have available to make the special diet a child needs, about feeding frequently, about recognizing the symptoms of serious respiratory infection, or about the importance of pre-natal care.

Fig. 19 India's share of vaccine-preventable deaths and disabilities



Deaths from vaccine-preventable diseases and cases of paralytic polio



Deaths and cases of paralytic polio prevented by vaccines

Source: *Future*, issue no.17, 1985-86, UNICEF New Delhi.

All of these life-saving and health-promoting actions are many times more likely to be adopted by a community, and to become part of the normal way of bringing up children, if they are introduced and continuously reinforced by a well-equipped, well-trained and well-trusted health worker who is a permanent presence in that community – a permanent channel for putting new knowledge at people's disposal, for explaining it simply and often, and for helping parents put it into practice when the time comes.

A few months' training can equip the right person to fulfil this role in a community. Consequently, about 60 to 100 such community health workers can be trained and equipped for the cost of training one doctor. It is therefore not impossible to conceive of every community in the world being served by a health worker of this kind within the next ten years. And indeed many developing countries have made dramatic progress in this direction over the last two decades.

To take just one large-scale example, India now has over 11,000 primary health care centres, 80,000 subcentres, and about 900,000 trained paramedics and traditional birth attendants. The Integrated Child Development Services scheme alone has trained over 100,000 *anganwadi* workers (serving 20% of India's mothers and young children in need) and is training 20,000 more such workers each year (see panel 25). Other large-scale projects are also putting trained people within reach – the Urban Community Development Programme, for example, now reaches 2 million people and the Programme for the Development of Women and Children in Rural Areas now covers over 300,000 rural women. Many state projects have also increased the number of people involved in community health – the Tamil Nadu Integrated Nutrition Project in the state of Tamil Nadu, for example, has now trained more than 9,000 community nutrition workers.

Today, the effective deployment of community health workers and the effective use of new child protection strategies could clearly be a mutually reinforcing process. Low-cost methods which can make a significant difference to the health and survival of a community's children can help to establish the position and influence of

the community health worker – which in turn facilitates the spread of new ways of promoting child health.

Even more important as a 'social synergism' is the effect which empowering a mother with knowledge can have on the mother's confidence and willingness to try to take more control over other aspects of her own and her family's life. Speaking of oral rehydration therapy, for example, WHO's Director-General has this to say about its wider effects:-

"*Nothing can be of greater concern to a mother than her child who is ill with diarrhoea and vomiting, refuses to eat, has lost weight and is not able to smile or play. When she uses oral therapy as she has been taught by a health worker, and within a mere four to six hours sees her child return to much of his or her normal self, she gains confidence in the health system. This curative action opens the way for the mother to be convinced of other important measures for diarrhoeal disease control – about the importance of continued breast-feeding, preparation of hygienic, locally available weaning foods, using clean water and latrines, washing her hands and bringing her infant for immunizations, especially against measles. It makes her more receptive to guidance on the action she needs to take for her child with a respiratory infection or a high fever from malaria and gives her confidence that her child will survive. And it convinces her that she can take action to stop herself from having more.*"[4]

A new synergism

The significance of this is that the presence of a trained health worker in the community could add a second dimension to the child survival revolution which is now under way. For a trained health worker can be a permanent channel of trusted communication and practical support, a practical way of transferring health knowledge to a community, a means of constantly reinforcing new ways so that they become an accepted part of daily life. And if parents can thereby be assisted to put into practice a simultaneous range of today's child protection methods, then the whole will add up to very much more than the sum of the parts.

And at this point, we are talking not just about saving lives by using sporadic and individual interventions against specific illnesses, but about the continuing promotion of normal healthy growth. In other words, the opportunity is now at hand to protect not just the lives but the normal development of hundreds of millions of young children who are today held back by the synergistic combination of frequent illness and inadequate feeding.

That is where the present potential leads. That is the hope that is now before us. And that will be the subject for the next chapter of this report.

Going for growth

In the industrialized nations, almost all children are periodically weighed during their first three years of life. The resulting record of the child's growth is one of the most important tools of the paediatrician's trade. "*If the child is growing, the child is well*; if the child is not growing, then something is wrong" – that was the first lesson of child care taught by the late Charles Janeway, first President of the International Paediatric Association and Professor of Paediatrics at Harvard Medical School. Like many paediatricians, Janeway would invariably demand to see an up-to-date growth chart before assisting junior colleagues with case problems.

Until now, the idea of also monitoring the growth of every child in the *developing* world has been regarded as impractical because it would be too difficult to organize, and unnecessary because there were so many more visible problems to be tackled first.

UNICEF now believes that this view has been outdated by advances in both nutritional knowledge and organizational capacity. Today, it is increasingly possible to monitor the growth of children in the developing world. And far from being unnecessary, growth monitoring is probably the most essential step towards the eradication of child malnutrition in our times.

In addition to its intrinsic merits, growth monitoring also offers a way of uniting the low-cost actions discussed so far in this report into a synergistic whole which could help to bring about not just a revolution in survival but a revolution in child development and growth.

The rest of this chapter will therefore be devoted to the proposition that every child born in the developing world should also be regularly weighed and that its growth should be monitored and promoted, up to the age of 36 months, by the child's own parents assisted by a community health worker who is trained and supported by the professional health services.

Myths of malnutrition

Mass growth monitoring is now being pioneered by several of the most populous nations of the developing world. Indonesia and Thailand are already regularly checking the growth of approximately 50% of their young children; China and Brazil are preparing to phase in nation-wide growth monitoring over the next few years; India has already printed its first 30 million growth charts and is bringing in regular weighing throughout the ICDS scheme which now reaches 20% of the nation's poorest children (see panel 14); Turkey and Ecuador have provided growth charts to every child immunized in their recent mass campaigns. In Africa, Botswana, Zimbabwe, and Sierra Leone are all beginning to use growth monitoring for the purposes of growth promotion or nutritional surveillance – or both.

Clearly, the regular weighing of literally millions of children, and the keeping of individual records, makes heavy new demands on both parents and health services. Why does regular weighing, which in itself achieves nothing, deserve such a high priority among all the pressing problems of the developing world?

The importance of growth monitoring can only be seen by brushing aside the dust of misinformation which has settled over the whole subject of child malnutrition.

To a public conditioned by photographs of starving children with empty rice bowls, it comes as something of a shock to realize that most malnutrition is invisible, that most malnutrition is not caused by shortages of food in the house, that most malnourished children are not hungry, and that most feeding programmes fail to have any significant effect on children's nutritional status.* Yet all of these statements are broadly true. And in exploding old myths, they clear the site for a new structure of understanding (fig. 20).

Repeated illnesses – especially the common illnesses such as diarrhoea, measles, whooping cough and other respiratory infections – are the principal underlying causes of malnutrition. They take away appetite and so reduce food intake, often for many days each month; they inhibit the absorption of the food that is eaten; they drain the body of nutrients through diarrhoea and vomiting; they burn up calories in fever. The result is frequent weight loss.

Diarrhoeal disease is the most devastating of all. Approximately 2% of a child's body weight is lost during each day of acute diarrhoea. With perhaps five or six attacks a year, each lasting about a week, a child may spend 20% of its first and second years of life with poor appetite, little food intake, and significant nutrient losses. It is therefore not difficult to see why diarrhoea is the

* Many feeding programmes are worthwhile in other important ways – for example in encouraging attendance at pre-school or health programmes.

most important single cause of malnutrition among the world's young children. And it is also no coincidence that the age band 6 to 24 months is the peak period for both diarrhoeal illness and nutritional damage.* The second year of life is also the most common age for measles, which takes away, on average, 7% of body weight.

If a young child suffers such weight losses on five to ten occasions a year (and that number of illnesses is not uncommon in poor communities of the developing world) then growth will inevitably falter and the child will stumble towards malnutrition. In Africa, for example, the spending of an additional $100 million per year in 1987 and 1988 on promoting immunization and ways of preventing and treating diarrhoeal disease would do far more to prevent malnutrition than spending the same amount on importing and distributing food.

The second major cause of child malnutrition is that basic facts about young child feeding have not yet been made available to the majority of parents. Even if there is enough food in the house to provide an adequate diet (and this is the case for the great majority of malnourished children) then growth faltering can still be caused by any or all of the following:-

○ Bottle-feeding rather than breast-feeding;

○ Introducing solid foods either too early or too late;

○ Feeding a young child with bulky staple foods which fill the child's stomach and assuage its hunger without meeting its energy needs;

○ Withholding food and fluids in the belief that this is the right thing to do when a child has diarrhoea and a poor appetite;

○ Not knowing that it is important to pay special attention to feeding during and after an illness in order to ensure that a child catches up on the weight that has been lost;

○ Feeding a child's small stomach infrequently (for example only twice a day instead of four times), perhaps because of the mother's enforced absence at work or in the fields, or because of the difficulties of collecting water and firewood;

○ Too little space between births or too many infections and too little rest and food for the mother during pregnancy – leading to anaemia, low birth-weight, and poor growth.

These two main causes of malnutrition – frequent illness and unsatisfactory feeding – are usually simultaneous and interacting. Together, they are the primary cause of growth faltering. And as the child's nutritional status declines, its strength and energy are depleted so that each subsequent illness lasts longer than it should and does more nutritional damage than it should. A downward spiral therefore sets in.* And it is that downward spiral which carries so many millions of children into malnutrition.

Eventually, the malnourished child will be attacked by another respiratory infection or another bout of diarrhoeal illness. Only this time it will prove too much for the weakened body. More often than not, this 'last straw' will be listed as the cause of death. But probably the majority of the 5 million children who died this year of diarrhoeal disease, for example, were already seriously malnourished by previous frequent illness. So in most cases it is the *process* which kills, not the event. And it is the process, as well as the event, which must therefore be addressed.

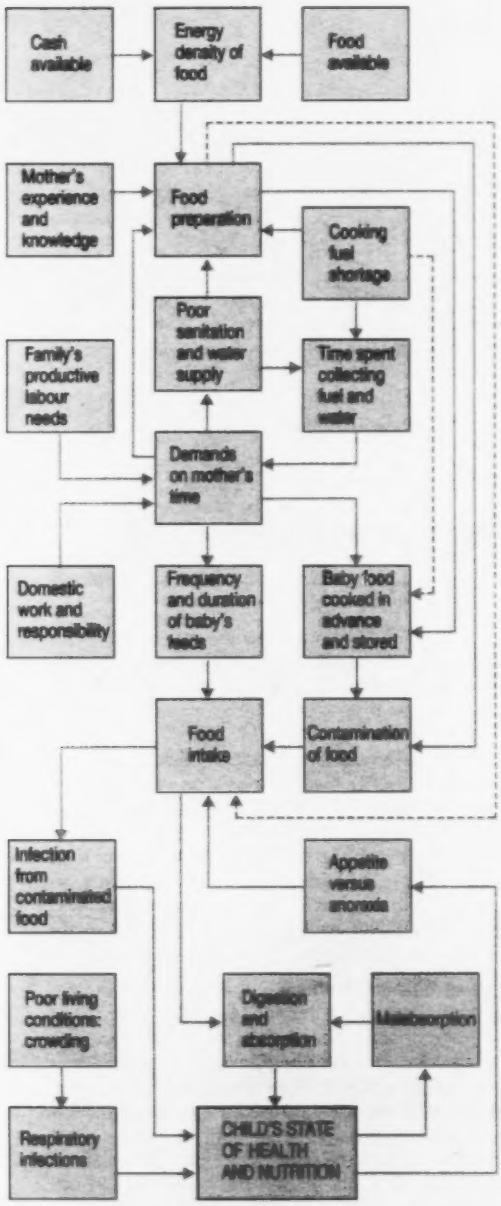
Prevention

The most pernicious aspect of this process – and the one which makes it so very difficult to prevent – is that it only becomes visible if growth falters over a period of several months so that malnutrition becomes established. At that point,

* Approximately 80% of all diarrhoeal deaths occur in children under two years of age. Much of the malnutrition caused by diarrhoeal illness can be attributed to appetite loss, which may reduce the amount of food a child consumes by up to 40%.

* The link between malnutrition and infection is not necessarily causal. There is also a social synergism at work; poverty – in the form of inadequate diet, water, sanitation, housing and schooling – predisposes a child to both infection and poor nutrition, which can then interact with each other in biological synergism to lead the child into further degrees of malnutrition.

Fig. 20 Household factors affecting the state of children's nutrition



Source: Food Aid and the Well-Being of Children in the Developing World, Report of the UNICEF/World Food Programme Workshop, New York, November 1985.

attempting to restore the child to normal growth is very much more difficult, very much more expensive, and has very much less chance of success.

This, in essence, is why so many nutrition programmes in the developing world are notorious for their lack of impact. By intervening against *visible* malnutrition, they intervene too late. Not until about the third year of life does the problem of poor growth become at all obvious: but by that time, most of the damage to the child's normal development has been done.

The crucial period is the first two years of life.* That is when the child's growth should be at its most rapid and when its energy needs are proportionately greatest. But that is also the age when diarrhoeal disease is most common and when the task of adequately feeding the child is at its most difficult.**

* One survey among five-year-olds in Delhi, for example, found an average weight difference of 2.46 kilogrammes between children of poor families and the children of families who were better off. But 84% of that difference in weight had developed in the first two and a half years of life and only 16% in the second two and a half years.[1]

** At this stage, for example, the child needs more frequent feeding with specially prepared and more energy-dense foods.

For the first four to six months of life, an exclusively breast-fed child will usually be protected against both illness and inadequate feeding and will therefore grow normally even in a poor community.

Malnutrition usually begins after the age of six months – when foods in addition to breast-milk become essential. The central problem is the preparation of a semi-solid food which is energy-dense and yet which is suitable for feeding to a small child. The usual cereal porridges, if they have enough energy density, are too thick and stodgy. Thinning them down with water reduces the energy density. Recent research at the Tanzanian Food and Nutrition Centre has shown that if millet, sorghum or other grains are malted by being allowed to germinate before drying, they can produce a weaning porridge which has at least double the normal energy value. Even more significant, studies by the Centre have shown that one or two teaspoons of dried and ground sprouted millet, added to an energy-dense but thick maize porridge, will thin it out to a runnier consistency, suitable for a small child, without reducing the energy value.

At the joint WHO/UNICEF nutrition programme in Iringa, Tanzania, malted millet and sorghum flour (called 'power flour') is being used by many mothers to prepare energy-dense

continued over

Zimbabwe: growing more food

While food shortages threaten the lives of millions in countries south of the Sahara, the southern African nation of Zimbabwe stands out as an exception. Zimbabwe is not only self-sufficient in its staple food, maize, but exports much of its surplus to other African countries.

Yet Zimbabwe did not escape the drought which has ravaged sub-Saharan Africa, and widespread crop failures in 1983 forced the government to import maize. Since then, better rains have helped farmers achieve a dramatic turn-around. The 1985 maize crop reached a record 2.9 million tonnes.

Zimbabwe's achievement is important for all of sub-Saharan Africa. And its most important message is that well over half the nation's maize is now grown by the small-scale, mainly subsistence farmers, many of them women, who used to account for only a third of production. In 1985 small farmers harvested 1.8 million tonnes of maize, more than three times their previous average.

To boost production by small farmers, the government has set prices high enough to guarantee them a profit and provide the incentive to grow more. A network of distribution centres makes seeds, fertilizers, pesticides and tools readily available. New grain storage depots and crop collection points enable farmers to market their produce without paying high transport costs. Storage losses are also kept low – less than 1%, compared with 15% for many other African countries. And the number of agricultural extension workers has been increased, to help small farmers adopt modern methods.

Being land-locked, Zimbabwe has made a point of working towards self-reliance. The nation produces virtually all its own fertilizers and manufactures its own farming tools. Local research stations have developed high-yielding seeds adapted to local conditions.

But the single most important factor in raising small farmers' yields has been the government's agricultural lending policy. In 1985 the government loaned about $35 million to 90,000 small farmers, compared with $1 million that went to fewer than 4,500 small farmers in 1979, the year before independence.

As in most African countries, women in Zimbabwe do two-thirds of the agricultural work. They were traditionally not allowed to own land, and were passed over when candidates were chosen for loans or training courses; but in 1981 the Zimbabwean parliament granted them equal rights with men in land ownership, agricultural training and credit.

Production has surged even among the 90% of peasant farmers who have not taken out loans. The small farmers' share of marketed produce rose from 10% in 1980 to 38% in 1985; the value of their maize and cotton sales grew from $17 million to $218 million over the same period.

The benefits have not been shared equally, since Zimbabwe has opted for a gradual transition from the commercial farming system of the past. About 5,500 white farmers, with farms averaging 2,200 hectares, still own 40% of the land and receive two-thirds of agricultural credit. Ambitious plans to resettle 162,000 black families on land formerly owned by whites have had to be scaled down, with 35,000 families resettled so far. At the same time, pressure is mounting on the generally poorer land cultivated by 900,000 black families, with an average farm size of 23 hectares; the resulting overcropping and erosion threaten to undermine the very basis of the country's food security.

Nevertheless, Zimbabwe's small farmers have demonstrated that with adequate government support and price incentives, they can produce enough food for their own families and a marketable surplus. At a time when governments and international agencies are increasingly aware of the shortcomings of large-scale agricultural projects, Zimbabwe points the way towards a new model for family food security, based on investment in the small farmer rather than the large producer.

After the age of two, most children grow at the same rate as well-nourished children, but many remain smaller and lighter because the very basis of their health and nutrition, laid down in the first two years of life, has been eroded.[2] No later action can reach back into the child's past to repair the damage done in those most vital months.*

For all of these reasons, action against malnutrition is best devoted to the prevention of growth faltering in those first two years of life. Not only is it easier and less expensive to attack malnutrition at this point, but it is obviously preferable from the point of view of protecting the child's normal growth.

But standing in the way of a pre-emptive strike against malnutrition is the fact that the enemy is *invisible*. Growth faltering is a slow process which cannot be seen by either a mother or a qualified paediatrician. There is no obvious problem, no trigger to action – until many months later when it is usually too late.

The prerequisite of prevention is therefore a way of detecting growth faltering at the earliest possible stage. Growth monitoring provides an answer. By regularly weighing the child, and recording the results, growth – or the lack of it – can be made *visible*.[4]

Therefore the first pillar of the case for growth monitoring is that it enables the attack on malnutrition to be switched from cure to prevention. And switching the emphasis to prevention holds out the hope that the attack on malnutrition can also be switched from the few to the many, and from failure to success.

Making sense to parents

In practice, no parent is going to make the effort to take a child to be weighed every single month unless that parent is informed of the reason and convinced of the importance of actively promoting child growth in the context of all the other problems and demands of family and working life. Unlike diarrhoea or fever, that invisible first faltering of growth does not demand attention or arouse concern. And in a village or neighbourhood where all children are similarly small and light for their ages, the comparing eyes of parents can easily be misled into thinking that their own child is growing normally.

Most parents of children whose growth is faltering are therefore not aware that there is a problem. Why then should they make the effort to take a child to be weighed thirty-six times in its first three years of life?

The basis of parental commitment to growth monitoring is the desire of all parents to see their children grow normally in mind and body and be free of constant illness. The process of growth promotion and growth monitoring now holds out that possibility to millions of parents. But before they can be expected to respond, they must be aware both of the problem and of its potential solution. Once more, the challenge of growth monitoring begins with a challenge of mass communication – the challenge of creating a mass awareness of the growth problem and a mass demand for its solution.

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weaning foods. Using germinated grain in this way appears to have been a traditional practice which had largely died out as more modern ideas were introduced. Another traditional practice was the souring of cereal mashes to produce a yoghurt-like weaning food which may have the additional and crucial advantage of being less susceptible to contamination. A major problem with frequent feeding of small children is the fact that most mothers do not have the time to cook special weaning foods four times a day. Yet if mothers make up enough weaning food for the whole day in one session, and keep it standing in the home at warm temperatures, then there is an obvious risk of contamination resulting in more diarrhoeal illness. A home-made weaning food which met all the other requirements of consistency, palatability, energy density, affordability and ease of preparation – *and also resisted contamination* – would without doubt be a major breakthrough against malnutrition. Finding such a weaning food is therefore a major challenge to science. And it may be that the answer will be found not in the West, but in some of the forgotten feeding traditions of Africa and other developing societies.

* As David Morley, Professor of Child Health at London University, has argued: "*If the intervention is too late, even the most successful of nutritional rehabilitation programmes can rarely re-establish the child on a normal growth curve.*"[3]

Philippines: warding off hunger

Half the year is *tiempo muerto* – the dead season – for 200,000 sugar plantation workers and their families in Negros Occidental, the Philippines. But for the past two years *tiempo muerto* has not meant the off-milling season but has spelled death. Death by starvation and disease for the most vulnerable of all: children.

Plummeting world sugar prices – from 29 cents a pound in 1980 to less than 3 cents in 1985 – have devastated the island's economy, which is almost totally dependent on one crop: sugar-cane.

Production slowed down, already low wages were cut back even further, and many sugar workers have been laid off. During the milling season many families can now afford only one meal of rice and vegetables a day; and during the slack time from May to October they may have to survive on as little as one meal of rice every other day.

A survey in mid-1985 found that in some parts of Negros, over 40% of children under 14 are moderately or severely malnourished. The Bacolod City hospital reported an increase of 67% in infant deaths in the first four months of 1985 over the same period in 1984. Infant mortality has soared to nearly double the national rate, and most of the deaths stem from malnutrition.

Recognizing the urgent need for help, the National Economic Development Authority, the provincial planning authority and UNICEF launched an emergency programme in September 1985. To stave off the immediate danger, malnourished children are being given food supplements and basic health care. To protect them over the long term, their families are being trained in nutrition and home food production.

At 2,000 feeding centres, 85,000 children receive a daily high-protein snack, produced locally from mung beans, rice, milk and oil. Church groups, planters' organizations and the ministries of social services, development, health and education are collaborating on the complex task of distributing the food supplements.

While the children eat their snacks, field workers and community volunteers teach their parents about health and nutrition. Eight 'Nutribuses' have been equipped to carry the workers to the more remote areas.

Health workers, meanwhile, are providing vitamin A and iron supplements, oral rehydration salts and vaccinations. The children are weighed every month, partly to identify those who require additional food, but also to increase mothers' awareness of the importance of watching over their children's growth.

Within six months, a check on over 1,000 of the children in the programme showed that 87% had gained an average of 1.5 kilos. In Valladolid, where the programme is in full swing and supplying extra rations to 894 of the community's 4,400 under-fives, 140 children under one died in the first quarter of 1985: none died over the same span of 1986.

So that the families of Negros will have their own food supplies to tide them over lean times, children in some 50 schools are learning basic gardening techniques, using high-quality seeds supplied by the programme. A hundred village-based promoters, trained to increase garden yields without expensive fertilizers or pesticides, are each working with 30 families to plant 3,000 model gardens.

The programme has yet to reach every child at risk. But even if all the necessary funding becomes available – current costs are 5 cents a day for each child – the programme can only be a bridging operation. The workers of Negros need access to land if they are to grow their own food and safeguard their children's survival.

In a first step towards a permanent solution, the new government of the Philippines has announced that the plantation owners are to allocate 10% of the land to their workers to plant food crops.

In many nations today, more than a third of the children are not growing as they should and they will therefore not fulfil the physical and mental potential with which they were born. The parents of those children have a right to know that their sons and daughters are not growing properly. And they have a right to know why.

They have a right to know that their children should be growing just as well as the children of the rich in their own society, and just as well as the children of Europe or North America, and that the differences in stature which they perceive as their children grow older are not a result of race or nationality but of poor health and poor food.

They have a right to know that it is frequent illnesses, 'harmless' illnesses like coughs and colds and diarrhoeas and fevers, which hold back their children's growth; they have a right to know that there are now some low-cost actions which they can take to protect that growth; and they have a right to be helped in that task by their nation's health services.

Specifically, parents have a right to know that to prevent poor growth they need the earliest possible warning of any faltering. If parents are aware that the only early warning system is regular weighing, then growth monitoring will make a great deal of sense and most parents will make a great deal of effort to see that it is done.

Community health workers

There would be little point in creating mass awareness of scientific knowledge about growth faltering and its causes if there were nothing that parents could do about it. But with today's increasing numbers of community health workers, and today's knowledge of low-cost actions, there is now a great deal that can be done.

A community health worker – even a health volunteer with only a few weeks' or months' training – will usually be necessary to assist mothers in regularly checking their children's growth. And it is the community health worker who embodies the second great advantage of the growth monitoring progress. For as well as giving an early warning of faltering growth, growth monitoring can also be the *channel* for informing and supporting parents in using today's knowledge to protect that growth.

Regular monthly weighing – and discussion of the child's progress with a community health worker – provides the opportunity for up to thirty-six separate contacts between the mother and the health services during the first three years of a child's life. And because frequent practical help and reassurance are important in enabling parents to put new knowledge into practice, this regular contact with a trained person could be the most important of all channels for informing and supporting parents in the use of today's low-cost child protection methods.

In other words, the process of growth monitoring can also promote knowledge about how to make and when to use ORT, about when and where to take a child to be immunized, about the importance – and occasional difficulties – of breast-feeding, about when to introduce other foods, about adding energy to the child's diet, about frequent feeding, about ensuring adequate vitamin A, about avoiding anaemia or iodine deficiency (see panel 30), about the need for periodic deworming, about the importance of leaving at least two years between pregnancies, about the need for pre-natal check-ups, about the need for more rest and more food in the months before giving birth.

In the best of today's growth monitoring programmes, the child's growth chart itself carries such messages in the form of a check-list of parental actions. Along with a visible record of the child's growth, this array of information has such potential for protecting the child's life and health that the card or plastic growth chart on which it is printed can justly be described as a 'life certificate' or 'passport to health', which could be given to every new-born child.

Growth monitoring can therefore help to bring all of these actions together. And at that point, a new horizon of child health begins to open up. For just as frequent illnesses exert a synergistic

downward force on the child's growth, so actions like immunization and ORT can exert an equally synergistic *upward* force on that growth.[3] Taking out five or six set-backs to growth every year – something that is now well within the power of most parents – can mean that the child has longer to recover normal weight in between illnesses and therefore less chance of stumbling into the downward spiral of poor growth and frequent illness during the most crucial years of its development.

Empowering the mother

As a technique, growth monitoring can give an early warning of growth faltering. As a process, it can be a channel for new information on growth promotion. And as a focal point for child health care, it can help to shift the emphasis from professionals to parents, from clinics to communities, from dependence to empowerment. And in so doing, it can help to build genuine primary health care.

If child health is organized around episodic responses to illness then it will naturally tend to centre on doctors and clinics. If, on the other hand, child health care is organized around the continuous promotion of normal growth, then its centre will be those whose care is also continuous – the parents. Promoting growth is a daily not a monthly task. And it is the daily actions of the parent, not the health worker, which will do most to determine whether or not a child will gain the necessary few hundred grammes before the next month's weighing.

Once the parent is acknowledged as the most important child health worker, the principal task of the formal health services becomes the empowering of parents to achieve their own aim of bringing up normal, healthy children. And in this process, growth monitoring is both medium and message.

It is a monthly statement of the fact that maintaining a child's normal growth in a poor community is a skilled and difficult job in the performance of which a mother deserves and needs the recognition and the practical help of her husband, her community, and her nation's health services. It is also a monthly statement that the name of the game is growth and that the mother is the central player.

In the best of the growth monitoring programmes now going into action, it is the mother who weighs the child, helps to record the results, and understands the line on the growth chart which makes her child's progress visible. She is able to ask the questions she wants, get the advice she needs, give and receive support from other mothers, and call on the more specialized services of more qualified people should she or her child require it. But the process is essentially one of giving the mother more power to protect her child's growth by her everyday actions. And the real test is not whether the growth chart is regularly filled in but whether the mother is involved in the conscious and informed promotion of her child's growth.

In the process of regular weighing, and recording and discussing the results, the mother *sees* for herself that feeding is the basis of child health, that the right food is a four-times-a-day immunization against malnutrition, and that weight gain is a function of minimizing the impact of common illnesses and maximizing the impact of available food.

If a mother regularly weighs her own child and shares in recording the results in a way which makes that child's growth visible and understandable to her, and if she has the opportunity to discuss her child's growth with a health worker, then that mother will *see* the point of monthly weighing. She will come to *see* a respiratory infection or a fever not just as a temporary nuisance but as a threat to her child's *growth*. She will *see* that diarrhoea is a nutritional illness and that ORT and continued feeding are necessary not just to protect against dehydration but to maintain the child's *growth*. She will *see* that a child needs much more food in the weeks following an illness in order to make a full recovery and that the definition of 'full recovery' is regaining the weight lost so that no damage is done to *growth*. She will *see* that the reason for going to the trouble and expense of adding more energy to the child's food in the form of oils or fats is that at this crucial stage in life the child

needs extra energy for *growth*. She will *see* that by exclusively breast-feeding her baby for the first few months she is ensuring its healthy normal *growth*.

The message is no longer abstract, no longer something only understood by or only of concern to the health worker. With growth monitoring as a tool to assist her, everything the mother learns can be seen to have an overall purpose and can be seen to be related to the one unifying and measurable aim of promoting her child's growth.

Feedback

A gain in weight from one month to the next is a cause for satisfaction. A failure to gain weight is a visible cause for concern.* And in making the problem visible to those who can do most about it – the parents and the health worker – growth monitoring also provides the trigger for action.

One reason for faltering growth becoming malnutrition, and one reason for interventions being made too late, is that there is usually no obvious sign to trigger action by either parents or health worker, no visible symptom of any cause for concern – until it is almost too late. With growth monitoring, a flattening or a fall in the child's growth-line provides that trigger, just as it provides the opposite signal that early action to maintain or restore growth has been successful. In other words, growth monitoring has a feedback loop, a mechanism which completes the circuit of informed action through which a more dynamic current of child health care can begin to flow.

Primary health care

By acknowledging that it is the mother who is the most important child health worker, growth monitoring sets a different example of child health care. In the conventional topography, the doctor and the clinic occupy the centre ground while the mother and child remain on the periphery. Growth promotion, almost by definition, inverts this circle, placing the mother in the central position and asking health workers, doctors, clinics and hospitals to play a supporting role – as advisers, as educators, as channels for new knowledge and reassurance in using it, as sources of essential health supplies such as anti-malarial tablets, or ORS packets, or contraceptives, or vitamin A capsules, and as a referral resource for bringing more difficult problems to the attention of more qualified people.

From the health services' point of view, the organization of child health care around growth promotion could therefore be a radical step in the direction of primary health care. Instead of being held passively inside health centres, growth monitoring asks that the knowledge and the skills of health professionals be actively deployed in the community to inform and support parents in promoting their children's health. In this way, growth monitoring can help to lead health care out into the community. It becomes the forum and the opportunity for other health actions, and the mainspring of primary health care for children.

Wider still, a concept of child health care which sees the mother as the front-line health worker is a concept which almost automatically invites the participation of a much broader range of resources – including the schools and pre-school centres, newspapers and magazines, radio and television, organized religion and voluntary movements, sports and entertainments – as important channels for reaching out to inform and support mothers in that task. In other words, the unifying purpose of 'mobilizing all for child health' is the knowledge and the action which will result not just in the saving of lives but in the empowering of millions of parents to protect and promote their children's healthy, normal *growth*.

Respect for the mother

Ideally, growth monitoring is an activity which would be organized by and for mothers them-

* 'Failure to gain weight' is more closely defined as failure to put on any weight over two consecutive weighings or a loss of more than 500 grammes at any time.[1]

The child survival index

The basic measure of infant and child survival is the under-five mortality rate or U5MR (number of deaths under the age of five, per 1,000 live births). A child *survival* rate per 1,000 births can be simply calculated by subtracting the U5MR from 1,000. Dividing this figure by ten shows the *percentage* of those born who survive to the age of five. The following table shows that percentage child survival rate for all countries in both 1960 and 1985.

Percentage of those born who survive to reach the age of five

	1960	1985		1960	1985		1960	1985
Afghanistan	62.0	67.1	Zambia	77.2	86.5	Korea, Dem. Rep. of	88.0	96.5
Mali	63.0	69.8	Peru	76.7	86.7	Korea, Rep. of	88.0	96.5
Sierra Leone	60.3	69.8	Libyan Arab Jamahiriya	73.2	87.0	Panama	89.5	96.5
Malawi	63.6	72.5	Morocco	73.5	87.0	Mauritius	89.6	96.8
Guinea	65.4	74.1	Indonesia	76.5	87.4	Uruguay	94.4	96.8
Ethiopia	70.6	74.3	Congo	75.9	87.8	Romania	91.8	96.9
Somalia	70.6	74.3	Kenya	79.2	87.9	Yugoslavia	88.7	96.9
Mozambique	69.8	74.8	Zimbabwe	81.8	87.9	USSR	94.7	97.1
Burkina Faso	61.2	75.5	Algeria	73.0	88.3	Chile	85.8	97.4
Angola	65.4	75.8	Honduras	76.8	88.4	Trinidad and Tobago	93.3	97.4
Niger	68.0	76.3	Tunisia	74.5	89.0	Jamaica	91.2	97.5
Central African Rep.	69.2	76.8	Guatemala	77.0	89.1	Kuwait	87.2	97.5
Chad	67.4	76.8	Saudi Arabia	70.8	89.1	Costa Rica	87.9	97.7
Guinea-Bissau	68.5	76.8	Nicaragua	79.0	89.6	Portugal	88.8	97.8
Senegal	68.7	76.9	South Africa	80.8	89.6	Bulgaria	93.8	97.9
Mauritania	69.0	77.7	Turkey	74.2	89.6	Hungary	94.3	97.9
Kampuchea	78.2	78.4	Iraq	77.8	89.9	Poland	93.0	97.9
Liberia	69.7	78.5	Botswana	82.6	90.1	Cuba	91.3	98.1
Rwanda	75.2	78.6	Viet Nam	76.7	90.2	Greece	93.6	98.2
Yemen	62.2	79.0	Madagascar	81.9	90.3	Czechoslovakia	96.8	98.3
Yemen, Dem.	62.2	79.0	Papua New Guinea	75.3	90.6	Israel	96.0	98.4
Bhutan	70.3	79.4	Ecuador	81.7	90.8	New Zealand	97.3	98.6
Nepal	70.3	79.4	Brazil	84.0	90.9	Austria	95.7	98.7
Burundi	74.2	80.0	Burma	77.1	90.9	Belgium	96.5	98.7
Bangladesh	73.8	80.4	El Salvador	79.4	90.9	German Dem. Rep.	95.6	98.7
Benin	69.0	80.7	Dominican Rep.	80.0	91.2	Italy	95.0	98.7
Sudan	70.7	81.3	Philippines	86.5	92.2	USA	97.0	98.7
Bolivia	71.8	81.6	Mexico	86.0	92.7	Germany, Fed. Rep. of	96.2	98.8
Tanzania, U. Rep. of	75.2	81.7	Colombia	85.2	92.8	Ireland	96.4	98.8
Nigeria	68.2	81.8	Syrian Arab Rep.	78.2	92.9	Singapore	95.0	98.8
Haiti	70.6	82.0	Jordan	78.2	93.5	Spain	94.4	98.8
Uganda	77.6	82.2	Mongolia	84.2	93.6	United Kingdom	97.3	98.8
Pakistan	72.3	82.6	Paraguay	86.6	93.6	Australia	97.5	98.9
Oman	62.2	82.8	Lebanon	90.8	94.4	France	96.6	98.9
Lao People's Dem. Rep.	76.8	83.0	Thailand	85.1	94.5	Hong Kong	93.5	98.9
Zaire	74.9	83.0	Albania	83.6	94.8	Canada	96.7	99.0
Cameroon	72.5	83.8	China	79.8	95.0	Denmark	97.5	99.0
Togo	69.5	84.0	Sri Lanka	88.7	95.2	Netherlands	97.8	99.0
India	71.8	84.2	Venezuela	88.6	95.5	Norway	97.7	99.0
Cote d'Ivoire	68.0	84.3	United Arab Emirates	76.1	95.7	Japan	96.0	99.1
Ghana	77.6	84.7	Guyana	90.6	95.9	Switzerland	97.3	99.1
Lesotho	79.2	85.6	Argentina	92.5	96.0	Finland	97.2	99.2
Egypt	70.0	86.4	Malaysia	89.4	96.2	Sweden	98.0	99.2

selves – at a convenient place and time in each community – supported by a health service which could be called upon to provide the appropriate level of treatment, including sophisticated curative care if necessary, when serious problems in nutritional health are revealed. But in most nations today, such an ideal still remains a challenge rather than an achievement. Only in very few cases is growth monitoring functioning to its full potential.

There are still technical problems in finding weighing scales which are cheap enough, light enough, accurate and durable enough – and cause less distress to the child being weighed.* There are weaknesses in the training and supervising of health workers. And there are less tractable problems of weak referral systems which effectively isolate the community health worker and the mother, and so turn primary health care into a second-class health system for the poor instead of an efficient system for making the appropriate level of health care equally available to all.

But the two most common and serious flaws in today's fledgling programmes are confusion about the purpose of growth monitoring and the exclusion of mothers from full participation in the process.

The first problem arises from the different functions for which growth charts can be used. They can be used, for example, as a way of identifying undernourished children whose growth has already faltered and who are in need of food supplements and nutritional rehabilitation. That is sometimes a necessary process. But it is a very different process from growth promotion and should not be confused with it. Growth promotion is aimed at much younger children, especially those under two years, and is an attempt to prevent growth from faltering in the first place. The most effective of today's growth monitoring programmes are not used as a safety net underneath a nutritional high-wire but as a way of keeping the child on that wire.

Another manifestation of this confusion is the use of average growth curves against which to compare individual children. Children come in many sizes, and what counts is the individual's own growth curve, its own weight gain from one month to the next. Comparison with an average child may again be a rapid method of identifying children at high risk, but it is not relevant to the purpose of growth promotion and can needlessly worry and discourage the mother whose child is small but gaining weight steadily each month.**

Lastly, too many of the present attempts at growth monitoring are centring the process on a doctor or health worker who weighs the child, updates the line on the chart, and then files it, with a few cursory words to the parent. If the growth chart is not a tool for the mother then it is not worth the paper it is printed on. It is the mother who must promote the child's growth every day by appropriate feeding and by minimizing the impact of illness. Therefore it is the mother who needs to understand the chart which prompts her actions and shows the results of her efforts.

It is sometimes said that uneducated mothers cannot understand graphs or growth monitoring and that the job can only be done by professional health workers. Jon Rohde, one of the paediatricians who has done most to pioneer modern methods of growth monitoring, has this to say in reply to that assertion:-

"Growth monitoring, most frequently through regular weighing of the child and recording of the weight on a growth chart, allows the mother to see growth. The chart must be designed for her use and comprehension. She herself must perceive and internalize what she is measuring. This is why the mother herself should weigh the child, why she

* A variety of scales are now being tested in different nations. Teaching Aids at Low Cost (TALC, PO Box 49, St. Albans, Herts AL1 4AX, United Kingdom) have produced a design, and will supply the mainspring for, a scale which can be locally manufactured for less than $5.00. Progress is also being made towards a durable solar-powered scale with a digital read-out and a wide enough weighing range to also monitor the mother-to-be's weight gain in pregnancy.[3]

** Similarly, a child whose weight-for-age is higher than average, but whose weight has declined since the previous month, has a growth problem which needs to be acted on.

Burma: campaigning for literacy

In the past twenty years, nearly 2 million adult illiterates in Burma have become literate, with the help of nearly half a million volunteers.

The government of Burma decided in 1962 that the benefits of a basic education should be made available to every citizen. But resources fell short. Even today, per capita income in this nation of 37 million is less than $200 a year. So a low-cost means had to be found to bring literacy within the reach of the majority.

Five years of experiment, starting in 1964, went into developing a Burmese primer with 25 lessons which drew mainly on village life and which on average could be learned during 80 class hours in under a year. The programme was launched as a national movement in 1969.

To bring the costs within manageable proportions, the literacy drives were launched at the start of the university summer break in April when thousands of students and teachers became available, travelling to the villages at their own expense. Local teachers and literate villagers were also recruited as volunteers. Every volunteer was given two weeks' training beforehand, and none took any pay.

The organizers realized from the start that the programme would only succeed if learners and teachers could sustain their enthusiasm over time. So a massive social mobilization campaign was launched. Across the nation, posters, billboards and the media continuously publicized the importance of literacy for the nation's development, and the literacy drives received constant radio and press coverage. Though a central committee gave general direction, each drive was made the responsibility of the local literacy committee, and became a matter of local pride.

The opening ceremonies for literacy drives were attended by senior officials and well-known artists, singers, film stars and writers. Village fairs and music festivals were arranged round the launch, along with mass celebrations to welcome the volunteers.

Songs promoting literacy were played over loudspeakers in the villages and towns. Literacy badges, shoulder bags, caps, pennants, paper fans, posters and postcards, all bearing the emblem of the campaign, kept it visible in the public eye as well as helping to raise funds. The Workers' Association, Peasants' Association and Youth Association all became actively involved. And 'People's Victory' parties were held when 90% of villagers had passed the test and the village was declared literate.

The campaign moved step by step, making sure of full literacy in one area before starting in the next. From 1969 to 1984, 233 townships, and some 48,000 villages, held literacy drives. The campaign has now reached three-quarters of Burma's 314 townships.

Once a village is declared literate, reading circles and village libraries are set up to help the readers maintain their newly acquired skills. Sixty-four follow-up booklets, specially written for new literates, have been collected into five comprehensive anthologies covering such concerns as nutrition, child care, pre-natal care, sanitation and agriculture.

The campaign has maintained men's literacy at the high level of over 85%, and has been especially successful in raising women's literacy. Before the first experiments started, a third of women were believed to be literate. By 1983 the figure was passing the 70% mark. The achievement has implications for children as well as women, since mothers' literacy improves their children's chances of survival.

Burma plans to bring literacy to all its townships by 1990, in parallel with the work to make primary education universally available. In the meantime, the government has also declared its intention of vaccinating every child by 1990. And the expertise in social mobilization which was developed in the literacy campaign is being put to a new use – taking immunization nation-wide.

should mark the card and why she should determine whether the growth of her child has met her expectations over the interval since the last weighing. 'Mothers can't weigh accurately, can't understand graphs, can't mark the cards, can't read...' say the critics. Ridiculous! Mothers can't because we won't teach them. We don't take the time, and we respect neither their capacity nor their motivation. We treat mothers like irresponsible, immature children, then wonder why they don't take our advice on how to rear their children. Whenever we have approached mothers in a culturally sensitive and intellectually respectful way, we have found responsive women able to weigh their children accurately and to interpret growth with the insight and subtlety of a trained nutritionist."

Speaking particularly of experiences in Indonesia, where 124,000 growth monitoring centres have been established in two-thirds of the nation's villages, Rohde continues:-

"Critics have noted that in many of these Indonesian villages the benefit of weighing is not yet evident. Small wonder when mothers are lined up, more than one hundred at a time, to hand their children to a health worker who mysteriously records some numbers or lines on the weight card and hands card and child back, hurrying on to the next in line. Weighing is not growth monitoring – by itself weighing is of little if any value. Without feedback nothing further will occur. But in thousands of these villages, monthly weighing carried out by mothers has become the driving force for all health activities.

"When properly organized, near home, by a small group of mothers, with appropriate guidance and occasional professional support from the health system, growth monitoring forms the basic recurring activity of Indonesian village-level primary health care. The monthly health and social occasion is looked forward to by the village women as a chance to see their friends, pick up practical tips on improving their home environment and ensure that their child is healthy or that appropriate interventions are taken even before he may appear to be sick or undernourished. Convenient, enjoyable, affordable and relevant, growth monitoring in the village, with accent on dialogue and timely health intervention, is a practical means to high-coverage community involvement in promotive child health.

"Furthermore, village-based growth monitoring activities 'pull' primary health care out of the health facilities and into the community itself. Villages have begun to demand services at the monthly weighing rallies, asking for immunization, ORT, deworming, contraceptive resupply, vitamin A and simple curative care in the village. There, it becomes relevant, demand-responsive, and achieves high coverage of the most needy population – what primary health care was meant to be."[1]

The beginning

Growth monitoring obviously cannot solve all the problems of bringing up a child in a poor community. And it is not itself made any easier by the heavy demands made on the time and energy of most mothers, especially during the peak seasons of the agricultural year. But the prevention of frequent illness, and of malnutrition, will also help to improve the life of a mother – giving her more pride and confidence, sparing her worry and energy, and saving perhaps 10% or more of her income and her time.[6] And despite the difficulties, growth monitoring is now a realistic possibility for the majority of children in the poor world as well as for the children of the richer nations.

Important beginnings have been made – especially in India and Indonesia – and many of these pioneering ventures are again demonstrating the importance of mass communications and the mobilization of all possible resources. For example, a recent evaluation of one of the best of Asia's growth monitoring programmes, the Tamil Nadu Integrated Nutrition Project, reports that:-

"It has succeeded in making the growth of children an important issue among mothers, opinion builders, administrators, lay public and the health workers... Effective use of education and communications services has succeeded in

creating a mass awareness about the importance of growth for a child."[7]

Similarly, in the growth monitoring programme run by the Child in Need Institute (CINI) in West Bengal, the accompanying communications effort has involved the schoolteachers, the *panchayat* (village council) leaders, and the traditional birth attendants. A 1986 report on the Institute's programme concludes:-

"*The major innovation in growth monitoring at CINI is the vigorous and active participation of the community. Their approach to achieving this by organizing mahila mandals (village women's organizations) at village levels is unique. Youth clubs, schoolteachers, panchayat leaders, traditional birth attendants and village practitioners, have also been educated in growth monitoring and nutrition education, for improved child survival.*

"*The programme has a separate communication division. A significant feature is the continued use of a professional advertising agency for supporting communication activities. They have succeeded in creating an awareness about child growth and health promotion among the community, mothers, teachers, village elders and lay public...*"[7]

Success story

Most of today's pioneering programmes remain unevaluated. And as a 1985 UNICEF seminar on growth monitoring concluded, "*what is needed now more than any other thing is some success – a demonstration that growth monitoring can be done properly and can make a difference*". This year, the first national-scale example of such a success may be beginning to emerge. What Egypt has done for ORT in the last three years, Thailand may now be doing for growth monitoring.

Starting with only 2,000 villages in 1981-1982, the Thai growth monitoring programme now regularly records the growth of over 1.5 million young children in over 37,000 villages. By the end of the present five-year national development plan, all 57,000 villages in Thailand will be covered.

Child growth charts, which include an immunization check-list, are used by parents as a way of assessing their children's growth and by village committees as a way of assessing the competence of their health worker. Figure 21 sets out the results to date.

In the early years of the programme, the growth charts of over 1 million children were analysed in a nutritional survey which showed that only 49% of young children were 'growing normally'. Four years later, that figure had risen to 70%. In all five provinces covered by the programme, a similar percentage change was reported.

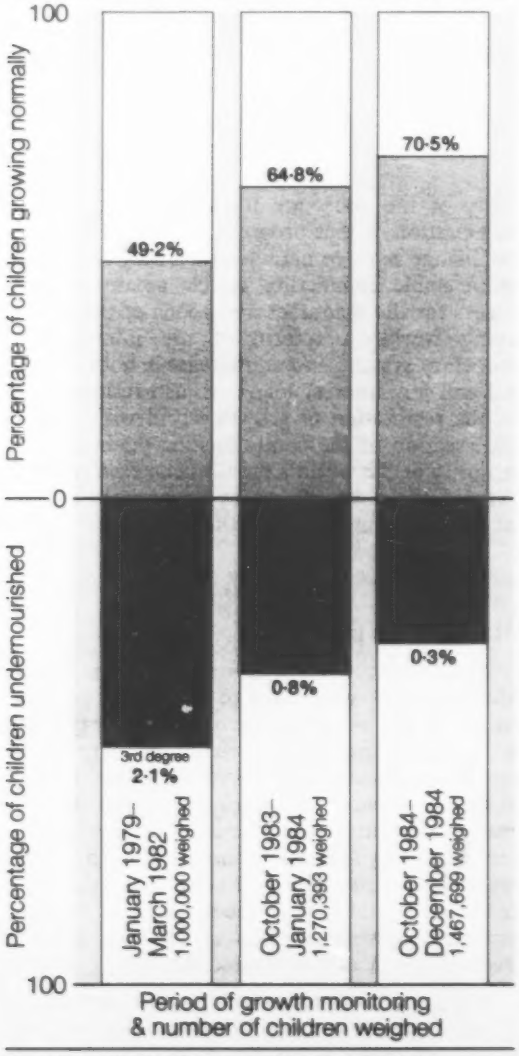
Again, it is clear that Thailand's achievements in growth monitoring are a result of political commitment at a high level followed by social mobilization at all levels. Under the chairmanship of a different cabinet minister each year, the programme can call on the resources of other government ministries as well as all branches of the health service. It also uses a growth chart specially designed to be used by parents, and has its own regular newsletter.

"*The success of the programme*," says Thailand's Minister of Public Health, "*depends mainly on the level of community involvement and understanding.*" To that end, the programme has mobilized not just the doctors and nurses of rural Thailand but the village health workers, the Thai Association of Paediatricians, the tradesmen's associations, the Red Cross, the radio stations, the public relations profession, mobile nutrition training teams, and journalists and columnists from Thailand's leading newspapers.[8]

A significant improvement in the growth of a nation's children, such as is now being made in Thailand, is a significant step forward in a nation's development. It is an improvement in the quality of life for the children of today – and for the nation of tomorrow. Poor growth in children has repeatedly been found to be associated with low economic and physical productivity in later life, high risk rates in pregnancy and child-bearing, increased incidence of low birthweight, reductions in brain cell linkages, and impaired performance in school.[9]

Fig. 21 Achievements of Thailand's growth monitoring programme, 1979–1984

1·5 million children in 37,000 villages are now regularly weighed by Thailand's growth monitoring programme. Parents are advised, at each weighing, about how to maintain their children's growth. Cases of faltering growth, once detected, are looked at more closely to find the cause and act on it – either by more intensive nutritional education, supplementary feeding, or by calling on more qualified health workers. This chart summarises the achievements of the programme.



Source: Growth Monitoring Programme of Thailand, Nutrition Division, Department of Health, Government of Thailand, Bangkok, November 1985.

The attack on malnutrition is therefore an attack on a cause as well as a symptom of poverty. And in the not-very-long term, maintaining child growth can help to maintain national growth.

An indicator of development

The Thai programme has also demonstrated one final advantage which growth monitoring offers to the development process at the present time.

We have already seen that growth monitoring could be a focal point for the mutually reinforcing combination of today's low-cost ways of protecting the lives and normal development of a nation's children. But as Thailand has shown, the process can at the same time generate the kind of aggregate statistics on child growth which would be one of the most sensitive of all indicators of development.

In the industrialized world, the growth of children has been called "*the very best index of the living conditions and health of the different classes and groups that make up modern societies*".[10] Similarly in the developing world, an analysis of the monthly growth of children can finely reflect such vital factors as household food availability, the frequency and severity of illness, and the availability of clean water, safe sanitation, and primary health care. "*Growth*," concludes the report of UNICEF's 1985 seminar on the subject, "*is an important indicator of child health and development – but it also shows how a society is organizing its development and change, how balanced the social and economic aspects of development are.*"[11]

In other words, just as the growth monitoring of an individual child can provide the essential feedback to a mother on the result of her efforts, so the growth monitoring of a nation's children can provide the feedback to planners and politicians on the results of their social and economic policies.

Growth monitoring leading to the regular

generation of local and national statistics on child growth – a process now beginning in several nations of the world – could therefore be both a powerful method of promoting human development and a sensitive indicator of how economic change is affecting the ability of the majority to meet their basic human needs.

As both means and measure, monitoring the growth of a nation's children – and mobilizing all possible resources behind the task of empowering parents to promote that growth – is a new proposition for progress. And it is one which is centrally relevant to the development challenge of the next twenty years.

Conclusions

Poverty is the basic cause of early deaths, ill health and poor growth among so many of the world's children. In the 1980s, progress against that poverty has been slowed, and in many nations thrown into reverse, by the effects of a long-running world recession.

Today, Europe and North America are entering a period of somewhat fragile economic recovery. But so far, that recovery has not brought any significant benefit to the poor of either the developing or the industrialized nations. Perhaps for the first time, we are witnessing a recovery of growth without a corresponding recovery in either commodity prices or employment levels. Raw material prices (excluding oil) are now at their lowest level for thirty years and stand at barely 50% of the prices being paid in the late 1970s. And in the industrialized world, unemployment, especially among the young and the disadvantaged, is still at record levels. In one of the richest cities in the world, for example, the percentage of New York's children living in families with incomes below the official poverty line now stands at approximately 40% as opposed to 15% in the 1970s. So far, in both industrialized and developing nations, economic recovery has largely bypassed the poor. And progress against poverty is therefore faced with its greatest challenge in the post-war era.

Structural change *within* nations – including land reform, the redistribution of income-earning opportunities, and economic policies designed to increase the participation and productivity of the poor – are fundamental to the re-acceleration of that progress. Similarly, structural change *between* nations – including fairer and more stable commodity prices, greater market access for the manufactured goods of the developing world, a reform of the international monetary system, and an increase in both official aid and low-interest loans – is also fundamental to the restoration of growth world-wide and to the creation of the conditions in which the vast majority of the world's families can earn enough, through their own efforts, to improve the quality of life for themselves and their families.

Maintaining progress

Meanwhile, the specialized agencies of the United Nations continue to work with governments to use the experience of the last forty years as a grindstone against which to sharpen the attack on absolute poverty in order to use available resources to maximum effect. And on many different fronts, the result is new knowledge and new low-cost techniques which, if they were now to be placed at the disposal of the majority, could bring about further progress against the worst aspects of absolute poverty even in the face of economic difficulty.

Similarly UNICEF, which devotes the bulk of its own resources to the improvement of basic living conditions in the developing world, is now drawing on its own experience, and that of the

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many governments it has worked with over the last forty years, to try to find new ways and means of maintaining progress for the world's children even in the absence of significant increases in the resources available.

For what the struggle against poverty most certainly cannot afford is the sacrifice of a generation of children on the altar of recession.

To pass on the heaviest burden of recession to those least able to bear it – the children of the poor – would be inhuman and uncivilized. And in the longer term, it would also be fundamentally uneconomic. For it would threaten the very foundations of that human capital on which all development is ultimately based. Speaking before a Select Committee of the US Congress, economist John Kenneth Galbraith testified: "*No error in the advice given to the developing countries in recent decades has rivalled that which placed investment in industrial apparatus ahead of the investment in human capital.*"

In the past four decades, the opportunity for social advance, including improvements in the health and well-being of children, has been made possible largely by overall development and economic progress. Conventionally, it would therefore seem that the difficult economic climate of the 1980s, which will almost certainly linger on into the 1990s, is likely to preclude significant advances in human well-being. But such an argument ignores the fact that the last forty years of development have been years of capacity-building. And by and large, the capacity that has been built up – especially in communications and infrastructure – has not yet been extensively exploited for the purpose of bringing about social improvements.

Now, in years when the creation of new capacity is being held back by low levels of economic growth, the time is surely right to devote increasing attention to the systematic exploitation of existing capacity in order to directly attack the worst aspects of poverty.

In essence, then, it is the new knowledge gained in these last forty years – in combination with the new capacity to implement that knowledge – which now creates the potential for significant social progress in the absence of major economic advance.

The opportunity for involvement

In the years ahead, progress will therefore depend largely on organizing and mobilizing existing capacity. And in concluding this year's report, it is appropriate to point out that this process – by definition – is one in which almost all can become involved.

A glance through the national case-studies featured in the panels of this report, for example, quickly reveals that the large-scale improvements in child health which are now being achieved have usually involved not just presidents and prime ministers, governments and health services, but also priests and imams, schoolteachers and educationalists, journalists and broadcasters, political parties and trade unions, women's organizations and workers' cooperatives, employers' associations and consumer unions, traditional birth attendants and modern midwives, family planning organizations and social services, sports associations and entertainment industries, youth movements and businessmen's associations, and professional bodies from the International Paediatric Association to the International Council of Nurses.

In all of this, bilateral aid agencies and United Nations organizations have played an important part – and so have millions of members of the general public, and thousands of voluntary organizations, in both industrialized and developing countries (see panels 16 and 23).

The goal of realizing today's potential for improvements in child survival and child development is therefore a cause in which *all* can become involved.

Looking forward

In sum, the achievements in child health documented in this year's report have essentially been brought about by using existing capacity to

Iodine deficiency: a solution at hand

Immunization and ORT are universally relevant. But there are also low-cost solutions waiting to go into action in regions of the world with particular health problems.

The outstanding example is the iodation of salt to eradicate iodine deficiency disorders (IDD) which affect hundreds of millions of people in mountainous or flood-prone areas of Asia, Africa and Latin America where soil and therefore food are lacking in iodine. To iodate all the edible salt in India would cost less than one cup of tea per person per year. But it can eradicate a deficiency which lowers the productivity of millions of adults and irreparably damages the mental capacity and physical growth of hundreds of thousands of children.

Because the most obvious sign of iodine deficiency is goitre – the unsightly swelling of the thyroid gland in the throat – iodine deficiency was long considered a cosmetic problem. But in the 1950s and 1960s, pioneering work by researchers such as Dr. V. Ramalingaswami (now Director-General of the Indian Council of Medical Research) began to reveal what turned out to be little less than a horror story about the hidden effects of iodine deficiency.

The lack of iodine restricts the body's production of the hormone thyroxine. In adults, the result is physical sluggishness and lowered productivity which can be corrected by adding iodine to the diet. In growing children, and in the unborn foetus, the result can be irreparable damage to the growth of brain, body, and central nervous system. More recently, iodine deficiency has also been linked to a high incidence of spontaneous abortion, stillbirth, and infant mortality.

The result is that, in some villages, 15%–20% of children are born with brain damage and grow up both ineducable and unemployable. In pockets of iodine deficiency, a quarter of the population are deaf-mutes or have pronounced physical or mental disorders.

Unlike most health problems, iodine deficiency has a 'centralized' scientific solution. Adding potassium iodate to salt in the proportion of 80 to 100 parts per million is neither expensive nor technically difficult. But because the human body requires only a teaspoonful of iodine in a whole lifetime, this simple measure can eradicate iodine deficiency.

But there are problems. Iodation adds fractionally to the cost of salt, and it is not always easy to convince people to pay more when the advantages are not widely known. Neither is it a simple matter to apply government regulations when there are so many people involved in producing, transporting, and marketing salt – and such fierce competition on price. And even after iodine has been added, it can leach out again because of poor storage and transport. But the biggest problems lie in convincing the authorities that this is a crucial problem with an available low-cost solution – and in convincing large numbers of people to buy only iodated salt and to store it properly.

In some regions, the power of salt iodation has already been dramatically demonstrated. China, for example, has reduced the prevalence of goitre in Jixian county from 65% in 1978 to 4% in 1986; earnings have increased tenfold and not a single child has been born a cretin in a village previously known for its high rates of mental retardation. Similarly, in one area of the kingdom of Bhutan, the percentage of children born with iodine deficiency fell from 10% to 1% within one year of salt iodation.

Last year, the International Council for the Control of Iodine Deficiency Disorders was set up to promote the eradication of IDD and to share the experiences of those countries which have already launched IDD control programmes. If these efforts get the political backing they need, and if the public becomes more informed about the iodine issue, then there is no doubt that one of the most tragic and unnecessary of all health problems can be eradicated by the end of this century.

achieve an initially limited number of child health objectives which are obvious and basic, effective and affordable.

Given the same kind of public support which has been mobilized against famine and starvation in recent times, there is no doubt that these strategies can also overcome, in large measure, the 'silent emergency' of needless malnutrition and infection among the world's children.

It is UNICEF's belief that significant inroads can be made against this silent emergency within the next *decade* – leading to child death rates in the early 1990s which will be only half those of the early 1980s.

This fortieth anniversary report therefore ends by looking forward rather than back:-

Within ten years, by UNICEF's fiftieth anniversary, it should frankly be a matter of national shame if the great majority of a nation's children are not fully immunized and if a nation's parents are not empowered with the knowledge to protect their children from death by dehydration and frequent diarrhoeal disease.

Within ten years, virtually all parents should be informed and supported in the use of today's basic knowledge about birth spacing and prenatal care, about low-cost ways of preventing and managing the most common of childhood's illnesses, and about promoting the normal physical and mental growth of their children.

Within much less than ten years all governments, along with the international community and its economic institutions, should have sought and found new ways of coping with economic set-backs to ensure that they are *never* translated into rising malnutrition and rising deaths among the world's young children.

Within ten years, the strategy of mobilizing all possible resources to directly achieve social objectives should also be taking the next steps on the road towards 'health for all by the year 2000' and beginning to go into action against some of the other worst aspects of absolute poverty.

The task ahead is to continue the struggle for economic recovery and growth while at the same time looking at the most obvious areas of human needs to see how existing knowledge and new ways of empowering people to use that knowledge can help to meet those needs in practical and achievable stages.

Breaking down those grandiose plans of development into a series of specific and achievable goals is now a prerequisite of progress. And today, the possibility of *achievement on a large scale* has become the paramount test of any proposal which claims to address itself seriously to the question of world poverty. Among the governments of rich and poor worlds, just as much as among the people who are struggling for their own development, it is the possibility of achievement which triggers the commitment and releases the resources; it is achievement which builds confidence and raises expectations; it is achievement which fuels further hopes and further efforts; and it is achievement which both encourages participation and builds experience of bringing about change.

Today, social mobilization strategies are being pioneered to try to reach specific and achievable goals such as universal immunization and universal knowledge of ORT. And in the last four years alone, many developing nations have shown, in practice, that such goals can indeed be achieved by such methods.

A practical start on a new strategy of maintaining human progress has therefore been made in the middle years of the 1980s.

And if the first steps along that new path are virtuously modest, the destination is among the grandest of human ambitions. For the strategy of mobilizing all possible resources behind the reaching of successive social goals now invites the participation of every individual and organization, in both industrialized and developing nations, in the task of reaching one of the greatest milestones in the human story – the overcoming of the worst effects of absolute poverty on our planet in our times. □

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II

STATISTICS

Economic and social statistics on the nations of the world, with particular reference to children's well-being.

Note on the new index of infant and child mortality.

COUNTRY INDEX TO TABLES

TABLES

1:Basic Indicators

U5MR ☐ IMR ☐ population ☐ births and infant and child deaths ☐ GNP per capita ☐ life expectancy ☐ adult literacy ☐ school enrolment ☐ income distribution

2:Nutrition

Low birth-weight ☐ breast-feeding ☐ malnutrition ☐ food production ☐ calorie intake

3:Health

Access to water ☐ access to health services ☐ immunization of children and pregnant women ☐ production of ORS ☐ trained attendance at birth ☐

4:Education

Male and female literacy ☐ radio receivers ☐ primary school enrolment and completion ☐ secondary school enrolment

5:Demographic Indicators

Child population ☐ population growth rate ☐ crude death rate ☐ crude birth rate ☐ life expectancy ☐ fertility rate ☐ urbanization

6:Economic Indicators

GNP per capita ☐ annual growth rates ☐ inflation ☐ poverty ☐ government expenditure ☐ aid ☐ debts

7:Basic Indicators for less populous countries

General note on the data

Signs and explanations

Footnotes for tables 1–7

Definitions

Main sources

New index of infant and child mortality

As a result of collaboration between the United Nations Population Division and UNICEF it is now possible to present a new and considerably improved index of infant and child mortality – the under-five mortality rate (U5MR).

At the beginning of the 1980s there was no internationally comparable set of infant mortality estimates, and UNICEF decided to support the United Nations Population Division in preparing the first internationally standardized set of infant mortality estimates and projections. These were completed in 1982 and were first presented in *The State of the World's Children* report for 1983. A second phase of the collaboration between the two agencies involved the preparation of a comparable set of child mortality estimates and projections while at the same time revising the infant mortality data.

In international publications, child mortality has hitherto been expressed statistically as deaths per 1,000 children aged 1-4 years inclusive. This uses a different denominator from that used for the infant mortality rate (deaths per 1,000 live births). This meant that the two estimates could not be easily combined and analysed. In addition, because the denominator used for the child death rate is so large, the rate quickly falls below 1 as the country improves its health conditions.

It is hoped that the under-five mortality rate will be adopted by countries for national and subnational analyses and presentation over the next few years so that it quickly becomes the standard form used when discussing child mortality.

As a result of the rigorous review of child mortality data undertaken in the course of this work, it now appears that of the 14.5 million infants and children in the world currently dying each year, nearly 5 million are above the age of 1 – a higher proportion than was previously estimated. It would seem that rather than 1 child death for every 2.5 infant deaths in the developing countries, as previously thought, there is in fact 1 child death for every 2 infant deaths. It is interesting to note that in the developed countries there is now only 1 child death for every 5.5 infant deaths.

Another very significant conclusion of these new estimates is the projection that the total number of annual infant and child deaths will fall from its current level of 14.5 million to around 10 million by the end of the century. Of course, one of the purposes of UNICEF supporting country activities in the area of child survival and development is to accelerate this projected rate of progress and to ensure that the consequences of current global economic difficulties are averted. The aim is to achieve a world-wide reduction in infant and child mortality by the end of the century considerably over and above that projected on the basis of past and current trends. However, one very disturbing projection is that the number of infant and child deaths in Africa will be no less at the end of this century than it is today – about 4.3 million a year. Thus Africa, which now accounts for less than 30% of all infant and child deaths, is projected, by the end of the century, to account for over 40% of all infant and child deaths and will even overtake South Asia in absolute numbers. Above all, in Africa, efforts have to be made to reduce the tragedy of avoidable infant and child deaths.

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Index to countries

In the following tables, countries are ranked in descending order of their under-five mortality rounded to the nearest whole number. Countries with the same rates are ranked alphabetically. The reference numbers indicating that rank are shown in the alphabetical list of countries below.

Afghanistan	1	Guinea-Bissau	14	Pakistan	33
Albania	80	Guyana	85	Panama	90
Algeria	53	Haiti	31	Papua New Guinea	65
Angola	10	Honduras	54	Paraguay	77
Argentina	86	Hong Kong*	122	Peru	46
Australia	120	Hungary	103	Philippines	71
Austria	110	India	40	Poland	104
Bangladesh	25	Indonesia	49	Portugal	101
Belgium	111	Iran, Islamic Rep. of	38	Romania	93
Benin	26	Iraq	61	Rwanda	19
Bhutan	22	Ireland	116	Saudi Arabia	57
Bolivia	28	Israel	108	Senegal	15
Botswana	62	Italy	113	Sierra Leone	3
Brazil	67	Jamaica	98	Singapore	117
Bulgaria	102	Japan	127	Somalia	7
Burkina Faso	9	Jordan	75	South Africa	59
Burma	68	Kampuchea	17	Spain	118
Burundi	24	Kenya	51	Sri Lanka	82
Cameroon	37	Korea, Dem. Rep. of	88	Sudan	27
Canada	123	Korea, Rep. of	89	Sweden	130
Central African Rep.	12	Kuwait	99	Switzerland	128
Chad	13	Lao People's Dem. Rep.	35	Syrian Arab Rep.	74
Chile	96	Lebanon	78	Tanzania, U. Rep. of	29
China	81	Lesotho	43	Thailand	79
Colombia	73	Liberia	18	Togo	39
Congo	50	Libyan Arab Jamahiriya	47	Trinidad and Tobago	97
Costa Rica	100	Madagascar	64	Tunisia	55
Côte d'Ivoire	41	Malawi	4	Turkey	60
Cuba	105	Malaysia	87	Uganda	32
Czechoslovakia	107	Mali	2	USSR	95
Denmark	124	Mauritania	16	United Arab Emirates	84
Dominican Rep.	70	Mauritius	91	United Kingdom	119
Ecuador	66	Mexico	72	USA	114
Egypt	44	Mongolia	76	Uruguay	92
El Salvador	69	Morocco	48	Venezuela	83
Ethiopia	6	Mozambique	8	Viet Nam	63
Finland	129	Nepal	23	Yemen	20
France	121	Netherlands	125	Yemen, Dem.	21
German Dem. Rep.	112	New Zealand	109	Yugoslavia	94
Germany, Fed. Rep. of	115	Nicaragua	58	Zaire	36
Ghana	42	Niger	11	Zambia	45
Greece	106	Nigeria	30	Zimbabwe	52
Guatemala	56	Norway	126		
Guinea	5	Oman	34	*Colony	

TABLE 1: BASIC INDICATORS

		Under-5 mortality rate		Infant mortality rate (under 1)		Total population (millions)	Annual no. of births, infant and child deaths (0-4) (thousands)	GNP per capita (US $)	Life expectancy at birth (years)	% adults literate: male/female	% of age group enrolled in primary school: male/female	% share of household income	
		1960	1985	1960	1985	1985	1985	1984	1985	1985	1982-1984	1975-1982 lowest 40%	1975-1982 highest 20%
	Very high U5MR countries (over 175) Median	**309**	**220**	**186**	**136**	**462T**	**21942T/4670T**	**260**	**46**	**42/21**	**65/41**	. .	. .
1	Afghanistan	380	**329**	215	189	16.5	844/279		38	39/8	19/9		
2	Mali	370	**302**	210	175	8.1	410/123	140	43	23/11	30/18		
3	Sierra Leone	397	**302**	225	175	3.6	171/51	310	35	38/21	46[y]/32[y]		
4	Malawi	364	**275**	206	157	6.9	373/102	180	46	52/31	76/54		
5	Guinea	346	**259**	208	153	6.1	286/74	330	41	40/17	49/23		
6	Ethiopia	294	**257**	175	152	43.6	2175/555	110	41	/.	58/34		
7	Somalia	294	**257**	175	152	4.7	221/56	260	41	18/6	28/15		
8	Mozambique	302	**252**	174	147	14.0	633/158	230[x]	46	55/22	91/68		
9	Burkina Faso	388	**245**	220	145	6.9	334/82	160	46	21/6	34/20		
10	Angola	346	**242**	208	143	8.8	416/100	470[x]	43	49/.	146/121		
11	Niger	320	**237**	191	140	6.1	315/74	190	44	19/9	34[x]/19[x]		
12	Central African Rep.	308	**232**	183	137	2.3	115/26	260	44	53/29	98/51		
13	Chad	326	**232**	195	138	5.0	223/51	80[x]	46	40/11	55/21		
14	Guinea-Bissau	315	**232**	188	138	0.9	37/8	190	44	46/17	88/40		
15	Senegal	313	**231**	180	137	6.4	301/69	380	44	37/19	63/42		
16	Mauritania	310	**223**	185	132	1.9	95/21	450	45	/.	45/29		
17	Kampuchea	218	**216**	146	145	7.3	316/68		46	/.	/.		
18	Liberia	303	**215**	180	127	2.2	107/23	470	50	47/23	95[x]/57[x]		
19	Rwanda	248	**214**	146	127	6.1	314/68	280	48	61/33	64/60		
20	Yemen	378	**210**	214	128	6.8	331/70	550	50	27/3	107/21		
21	Yemen, Dem.	378	**210**	214	128	2.1	101/21	550	50	59/25	97/36		
22	Bhutan	297	**206**	186	134	1.4	53/11	80[x]	47	/.	32/17		
23	Nepal	297	**206**	186	134	16.5	669/137	160	47	39/12	100/43		
24	Burundi	258	**200**	152	119	4.7	220/44	220	48	43[x]/26[x]	55/36		
25	Bangladesh	262	**196**	156	124	101.1	4374/853	130	49	43/22	67/55	17	47
26	Benin	310	**193**	185	115	4.1	207/40	270	45	37/16	92/43		
27	Sudan	293	**187**	170	112	21.6	975/180	360	49	41[y]/21[y]	59/42		
28	Bolivia	282	**184**	167	117	6.4	278/51	540	52	84/65	94/81		
29	Tanzania, U. Rep. of	248	**183**	146	111	22.5	1144/212	210	52	90[x]/80[x]	91/84		
30	Nigeria	318	**182**	190	110	95.2	4848/873	730	50	54/31	/.		
31	Haiti	294	**180**	197	123	6.6	272/49	320	54	40/35	74[x]/64[x]	6	48
32	Uganda	224	**178**	133	108	15.5	784/141	230	50	70/45	65/49	. .	. .
	High U5MR countries (95-174) Median	**238**	**126**	**152**	**83**	**1498T**	**50047T/7305T**	**740**	**57**	**68/50**	**101/88**	. .	. .
33	Pakistan	277	**174**	163	115	100.4	4155/727	380	51	40/19	63/32		
34	Oman	378	**172**	214	109	1.2	56/10	6490	54	/.	94/72		
35	Lao People's Dem. Rep.	232	**170**	155	116	4.1	163/28	80[x]	53	92/76	94[x]/80[x]		
36	Zaire	251	**170**	148	103	29.9	1356/231	140	51	79/45	103[x]/74[x]		
37	Cameroon	275	**162**	163	99	9.9	424/68	800	52	68/55	117/98		
38	Iran (Islamic Rep. of)	254		169		44.6	1772/284		58	62/39	113/88		
39	Togo	305	**160**	182	98	3.0	135/22	250	52	53/28	124/80		
40	India	282	**158**	165	105	758.9	22606/3617	260	57	57/29	100/68	16	49
41	Côte d'Ivoire	320	**157**	200	105	9.8	448/69	610	52	53/21	93/64		
42	Ghana	224	**153**	132	94	13.6	642/100	350	53	64/43	89/70		
43	Lesotho	208	**144**	149	106	1.5	64/9	530	50	62/84	94/126		
44	Egypt	300	**136**	179	93	46.9	1626/220	720	59	59/30	101/76	17[x]	48[x]
45	Zambia	228	**135**	135	84	6.7	323/44	470	52	84/67	100/89	11	61[x]
46	Peru	233	**133**	142	94	19.7	700/91	1000	60	91/78	120/112	7[x]	61
47	Libyan Arab Jamahiriya	268	**130**	160	90	3.6	162/21	8520	60	81/50	/.	. .	. .
48	Morocco	265	**130**	163	90	21.9	754/98	670	60	45/22	97/61		
49	Indonesia	235	**126**	139	79	166.4	5043/630	540	55	83/65	118/112	14	49
50	Congo	241	**122**	143	77	1.7	78/9	1140	48	71/55	/.		
51	Kenya	208	**121**	124	76	20.6	1138/137	310	54	70/49	104/97	9	60
52	Zimbabwe	182	**121**	110	76	8.8	417/51	760	57	81/67	136/137	. .	. .
53	Algeria	270	**117**	168	81	21.7	916/105	2410	61	63/37	106/82		
54	Honduras	232	**116**	144	76	4.4	182/21	700	61	61/58	101/101		
55	Tunisia	255	**110**	159	78	7.1	225/25	1270	62	68/41	125/102		
56	Guatemala	230	**109**	125	65	8.0	334/37	1160	61	63/47	78/67		
57	Saudi Arabia	292	**109**	170	78	11.5	480/53	10530	62	35[x]/12[x]	81/56		
58	Nicaragua	210	**104**	140	69	3.2	142/15	860	62	. . /. .	113/118		
59	South Africa	192	**104**	135	78	32.4	1246/131	2340	55	/.	/.		
60	Turkey	258	**104**	190	84	49.3	1466/154	1160	63	86/62	116/107	12	57
61	Iraq	222	**101**	139	73	15.9	678/68	3020[x]	63	90/87	113/99		
62	Botswana	174	**99**	119	72	1.1	55/6	960	56	73/69	89/102		
63	Viet Nam	233	**98**	156	72	59.7	1815/182		60	91[x]/78[x]	120[x]/105[x]		
64	Madagascar	181	**97**	109	63	10.0	446/42	260	51	74/62	78/71		

Note: nations are listed in descending order of their 1985 under-five mortality rates (shown in bold type)

		Under 5 mortality rate		Infant mortality rate (under 1)		Total population (millions)	Annual no. of births/infant and child deaths (0-4) (thousands)	GNP per capita (US $)	Life expectancy at birth (years)	% adults literate male/female	% of age group enrolled in primary school male/female	% share of household income 1975-1982	
		1960	1985	1960	1985	1985	1985	1984	1985	1985	1982-1984	lowest 40%	highest 20%
	Middle U5MR countries (30–94) Median	**138**	**54**	**92**	**44**	**1692T**	**37984T/2226T**	**1480**	**67**	**89/84**	**106/100**	. .	. .
65	Papua New Guinea	247	**94**	165	68	3.5	131/12	710	53	55/35	68/55		
66	Ecuador	183	**92**	124	67	9.4	340/31	1150	65	85/80	117/114		
67	Brazil	160	**91**	116	67	135.6	4008/361	1720	64	79/76	106/99	7*	67*
68	Burma	229	**91**	153	66	37.2	1101/99	180	59	. / .	75/70		
69	El Salvador	206	**91**	142	65	5.6	218/20	710	66	75/69	69/69	16	47
70	Dominican Rep.	200	**88**	125	70	6.2	200/18	970	64	78/77	104/115	. .	. .
71	Philippines	135	**78**	80	48	54.5	1743/139	660	63	86/85	115/113	14*	54*
72	Mexico	140	**73**	92	50	79.0	2566/180	2040	66	92/88	120/117	10	58
73	Colombia	148	**72**	93	48	28.7	865/61	1390	64	89/87	119/122	. .	. .
74	Syrian Arab Rep.	218	**71**	135	54	10.5	487/34	1620	64	76/43	114/96	. .	. .
75	Jordan	218	**65**	135	49	3.5	163/11	1570	65	87/63	101/98	. .	. .
76	Mongolia	158	**64**	109	49	1.9	68/4	. .	63	93*/8*	105/107	. .	. .
77	Paraguay	134	**64**	86	44	3.7	130/8	1240	66	91/85	107/99	. .	. .
78	Lebanon	92	**56**	68	44	2.7	80/5	. .	66	86/69	115/105	. .	. .
79	Thailand	149	**55**	103	44	51.4	1313/72	860	63	94/88	101*/97*	15	50
80	Albania	164	**52**	122	43	3.1	83/4	. .	72	. / .	104/97	. .	. .
81	China	202	**50**	150	36	1059.5	19805/990	310	69	82/56	116/93		
82	Sri Lanka	113	**48**	70	36	16.2	423/20	360	69	91/83	103/99	19*	43*
83	Venezuela	114	**45**	81	38	17.3	551/25	3410	69	88/85	106/104	10*	54*
84	United Arab Emirates	239	**43**	145	35	1.3	35/2	21920	68	58*/38*	94/95	. .	. .
85	Guyana	94	**41**	69	33	0.9	26/1	590	69	97/95	99/99	. .	. .
86	Argentina	75	**40**	61	35	30.6	730/29	2230	70	96/95	107/107	14*	50*
87	Malaysia	106	**38**	73	28	15.6	450/17	1980	68	81/66	100/98	11*	56*
88	Korea, Dem. Rep. of	120	**35**	85	27	20.4	607/21		68	. / .	118*/114*		
89	Korea, Rep. of	120	**35**	85	27	41.3	958/34	2040	68	96*/88*	104/102	17	45
90	Panama	105	**35**	69	25	2.2	60/2	1980	72	89/88	106/101	7*	62*
91	Mauritius	104	**32**	70	26	1.1	26/1	1090	67	89/77	112/112	12	61
92	Uruguay	56	**32**	50	29	3.0	58/2	1980	71	93*/94*	110/107	. .	. .
93	Romania	82	**31**	69	25	23.0	394/12	2560*	71	. / .	100/99	. .	. .
94	Yugoslavia	113	**31**	92	23	23.2	365/11	2110	71	97/86	101/101	19	39
	Low U5MR countries (under 30) Median	**42**	**13**	**35**	**11**	**1165T**	**16024T/328T**	**7260**	**74**	**97/93**	**102/101**	**18**	**40**
95	USSR	53	**29**	38	24	278.6	5193/150	4550*	72	. / .	. / .	. .	. .
96	Chile	142	**26**	114	22	12.0	270/7	1700	70	97*/96*	112/110	. .	. .
97	Trinidad and Tobago	67	**26**	54	22	1.2	30/1	7150	69	97/95	107/108	13	50
98	Jamaica	88	**25**	62	20	2.3	63/2	1150	74	. / .	106/107	. .	. .
99	Kuwait	128	**25**	89	22	1.8	66/2	16720	72	76/63	96/94	. .	. .
100	Costa Rica	121	**23**	84	19	2.6	77/2	1190	73	94/93	103/100	12*	55*
101	Portugal	112	**22**	81	19	10.2	172/4	1970	72	89/80	122/123	15*	49*
102	Bulgaria	62	**21**	44	16	9.1	144/3	4150*	72	. / .	100/100	. .	. .
103	Hungary	57	**21**	51	20	10.7	134/3	2100	71	. / .	101/101	21	36
104	Poland	70	**21**	62	19	37.2	648/14	2100*	72	. / .	101/100	. .	. .
105	Cuba	87	**19**	62	15	10.0	177/3	. .	74	96*/96*	111/105	. .	. .
106	Greece	64	**16**	53	14	9.9	145/3	3770	74	97/88	105/105	. .	. .
107	Czechoslovakia	32	**17**	26	15	15.6	234/4	5820*	72	. / .	88/89	. .	. .
108	Israel	40	**16**	33	13	4.3	94/2	5060	75	97/93	95/97	18	40
109	New Zealand	27	**14**	23	12	3.3	52/1	7730	74	. / .	103/101	16	45
110	Austria	43	**13**	37	11	7.5	94/1	9140	73	. / .	100/98	. .	. .
111	Belgium	35	**13**	31	9	9.9	122/2	8610	74	. / .	96/97	22	36
112	German Dem. Rep.	44	**13**	37	10	16.8	241/3	7180*	73	. / .	94/96	. .	. .
113	Italy	50	**13**	44	11	57.3	697/9	6420	75	98/96	103/102	18	44
114	USA	30	**13**	26	11	238.0	3769/49	15390	75	. / .	. / .	17	40
115	Germany, Fed. Rep. of	38	**12**	31	10	60.9	631/8	11130	74	. / .	. / .	20	40
116	Ireland	36	**12**	31	10	3.6	78/1	4970	73	. / .	97*/97*	20*	39*
117	Singapore	50	**12**	36	9	2.6	43/1	7260	73	93/79	115/111	. .	. .
118	Spain	56	**12**	46	10	38.5	572/7	4440	75	97/92	112/110	19	40
119	United Kingdom	27	**12**	23	10	56.1	748/9	8570	74	. / .	100/101	19	40
120	Australia	25	**11**	21	9	15.7	247/3	11740	75	. / .	105/104	15	47
121	France	34	**11**	29	8	54.6	772/8	9760	75	. / .	109/107	16	46
122	Hong Kong	65	**11**	44	9	5.5	92/1	6330	76	95/81	107/104	16	47
123	Canada	33	**10**	28	9	25.4	382/4	13280	76	. / .	105/102	17	40
124	Denmark	25	**10**	22	8	5.1	56/1	11170	75	. / .	100/101	17	39
125	Netherlands	22	**10**	18	8	14.5	175/2	9520	76	. / .	95/97	22	36
126	Norway	23	**10**	19	8	4.1	50/1	13940	76	. / .	98/99	19	38
127	Japan	40	**9**	31	6	120.7	1533/14	10630	77	. / .	100/100	22	38
128	Switzerland	27	**9**	22	8	6.4	71/1	16330	76	. / .	. / .	20	38
129	Finland	28	**8**	22	6	4.9	63/1	10770	74	. / .	102/101	18	38
130	Sweden	20	**8**	16	6	8.4	89/1	11860	76	. / .	98/99	21	42

TABLE 2: NUTRITION

		% of infants with low birth weight 1982-83	% of mothers breast feeding 1980-1984			% of children under five suffering from mild moderate/severe malnutrition 1980-1984	Prevalence of wasting aged 12-23 months (% of age group) 1982-1984	Average index of food production per capita (1974-76 = 100) 1982-1984	Daily per capita calorie supply as % of requirements 1983
			3 months	6 months	12 months				
	Very high U5MR countries (over 175) Median	**14**	**95**	**94**	**79**	**31/7**	**23**	**95**	**91**
1	Afghanistan	20	. .	. .	. .	. / . .	. .	102	. .
2	Mali	13	. .	. .	. .	. / . .	26	101	68
3	Sierra Leone	14	98*	94Y	83Y	24*/3*	36	95	91
4	Malawi	10	. .	. .	95*	30*/1*	28	100	95
5	Guinea	18	. .	. .	. .	. / . .	. .	93	84
6	Ethiopia	13	. .	97Y	95Y	60*/10*	41	100	93
7	Somalia	. .	100*	100*	. .	16Y/ . .	62	69	89
8	Mozambique	16	. .	. .	. .	. / . .	. .	73	71
9	Burkina Faso	21	. .	. .	. .	. / . .	17X	94	85
10	Angola	19	96X	. .	. .	. / . .	. .	81	87
11	Niger	20	65*	30*	15*	17*/9*	21	113	97
12	Central African Rep.	23	. .	. .	. .	. / . .	. .	94	91
13	Chad	11	. .	. .	. .	. / . .	. .	95	68
14	Guinea-Bissau	15	. .	. .	. .	. / . .	. .	. .	. .
15	Senegal	10	94	94	82	. / . .	20	66	102
16	Mauritania	10	. .	. .	. .	30*/10*	. .	95	97
17	Kampuchea	. .	100*	100*	90*	. / . .	. .	107	. .
18	Liberia	. .	96	92	64	17Y/2Y	7	91	102
19	Rwanda	17	. .	98*	. .	29*/8*	23	112	98
20	Yemen	9	80Y	76Y	55Y	54Y/4Y	17Y	84	92
21	Yemen, Dem.	12	85X	73X	58X	32*/8*	36X	83	94
22	Bhutan	. .	. .	. .	. .	33/6	. .	104	. .
23	Nepal	. .	99X	99X	97X	50Y/7Y	27X	91	93
24	Burundi	14	. .	95*	90*	30/5	36	106	102
25	Bangladesh	50	98X	97X	89X	63*/21*	21	99	81
26	Benin	10	95*	90*	75*	. / . .	14	97	83
27	Sudan	15	91X	86X	72X	53*/2*	. .	93	90
28	Bolivia	10	93X	91X	48X	49Y/3Y	. .	84	82
29	Tanzania, U. Rep. of	14	. .	. .	. .	43*/7*	. .	100	98
30	Nigeria	25	98*	94*	90*	. / . .	. .	96	86
31	Haiti	17	93X	85X	72X	65*/5*	18X	90	83
32	Uganda	10	85*	70*	20*	15Y/4Y	. .	98	101
	High U5MR countries (95–174) Median	**13**	**95**	**92**	**85**	**33/3**	**13**	**91**	**101**
33	Pakistan	27	98X	96X	90X	62*/10*	14	104	95
34	Oman	14	. .	. .	. .	. / . .	. .	. .	. .
35	Lao People's Dem. Rep.	15	90*	90*	90*	. / . .	. .	129	90
36	Zaire	8	100X	100X	85X	. / . .	11	92	96
37	Cameroon	13	. .	98X	97X	. / . .	. .	83	88
38	Iran (Islamic Rep. of)	14	. .	. .	. .	. / . .	. .	99	118
39	Togo	17	. .	99X	90X	. / . .	9X	92	94
40	India	30	. .	. .	. .	33*/5*	37	110	96
41	Côte d'Ivoire	14	93*	90*	50*	. / . .	21*	110	112
42	Ghana	17*	100*	70*	25*	23*/7*	28	73	66
43	Lesotho	10	99X	98X	90X	. / . .	7	78	104
44	Egypt	7	. .	91Y	84Y	46Y/1Y	3X	91	126
45	Zambia	2	. .	. .	93*	. / . .	47	74	84
46	Peru	9	78X	72X	55X	42Y/2Y	. .	84	85
47	Libyan Arab Jamahiriya	5	. .	. .	. .	. / . .	. .	94	155
48	Morocco	9	95*	95*	95*	40Y/5Y	. .	91	105
49	Indonesia	14	98*	97*	83*	27*/3*	17	120	110
50	Congo	15	97*	97*	85*	30*/1X	. .	96	109
51	Kenya	13	89X	84X	44X	30*/2*	8X	82	83
52	Zimbabwe	15	. .	. .	88*	. / . .	. .	69	82
53	Algeria	12	. .	. .	. .	. / . .	. .	79	115
54	Honduras	9	48*	28*	24*	29*/2*	. .	99	94
55	Tunisia	7	95*	92*	71*	60Y/4Y	3X	84	121
56	Guatemala	18	. .	84X	74X	. / . .	. .	101	95
57	Saudi Arabia	6	. .	91*	52*	. / . .	9	98	134
58	Nicaragua	15	. .	. .	71*	65Y/3Y	. .	78	101
59	South Africa	12	. .	. .	. .	. / . .	. .	83	118
60	Turkey	7	99*	91*	51*	. / . .	. .	103	123
61	Iraq	7	. .	. .	. .	. / . .	. .	85	118
62	Botswana	12	. .	. .	97Y	31*/1*	19	61	93
63	Viet Nam	25	. .	. .	. .	. / . .	. .	123	93
64	Madagascar	11	95*	95*	85*	. / . .	. .	89	112

Note: nations are listed in descending order of their 1985 under-five mortality rates (see table 1)

		% of infants with low birth-weight 1982-83	% of mothers breast-feeding 1980-1984			% of children under five suffering from mild-moderate/severe malnutrition 1980-1984	Prevalence of wasting aged 12-23 months (% of age group) 1982-1984	Average index of food production per capita (1974-76 = 100) 1982-1984	Daily per capita calorie supply as % of requirements 1983
			3 months	6 months	12 months				
	Middle U5MR countries (30-94) Median	**9**	**68**	**58**	**30**	. ./. .	**10**	**108**	**111**
65	Papua New Guinea	25	. .	. .	. .	38[y]/	52[x]	95	79
66	Ecuador	. .	. .	. .	. .	40[y]/	. .	89	89
67	Brazil	9	59[x]	19[x]	5[x]	55[y]/1[y]	6[x]	115	106
68	Burma	20	90[x]	90[x]	90[x]	50[y]/1[y]	48	124	117
69	El Salvador	13	. .	77	55	52[x]/6[x]	1	88	90
70	Dominican Rep.	15	66[x]	47[x]	26[x]	/.	4	99	105
71	Philippines	15	68[x]	58[x]	28[x]	40[y]/3[y]	16[x]	107	104
72	Mexico	15	62[x]	48[x]	27[x]	/.	. .	104	126
73	Colombia	10	84[x]	58[x]	28[x]	43[x]/8[x]	10	104	110
74	Syrian Arab Rep.	9	88[x]	72[x]	41[x]	/.	. .	123	127
75	Jordan	7	79[x]	70[x]	41[x]	/.	9[x]	136	117
76	Mongolia	10	. .	. .	. .	/.	. .	90	117
77	Paraguay	6	80[x]	77[x]	49[x]	/.	. .	105	122
78	Lebanon	10	. .	. .	. .	/.	. .	145	. .
79	Thailand	12	48[x]	47[x]	20[x]	29[x]/1[x]	18[x]	115	105
80	Albania	7	. .	. .	. .	/.	. .	107	121
81	China	6	. .	. .	. .	/.	. .	128	111
82	Sri Lanka	25	83[x]	74[x]	48[x]	/.	22[x]	125	106
83	Venezuela	9	50[x]	40[x]	30[x]	/.	. .	88	99
84	United Arab Emirates	7	. .	. .	. .	/.	. .	. .	. .
85	Guyana	18[x]	77	60	35	/.	. .	. .	. .
86	Argentina	6	. .	. .	. .	/.	. .	109	119
87	Malaysia	10	47[x]	34[x]	19[x]	/.	6	112	111
88	Korea, Dem. Rep. of	. .	. .	. .	. .	/.	. .	113	127
89	Korea, Rep. of	9	94[x]	93[x]	84[x]	/.	. .	109	118
90	Panama	8	62[x]	48[x]	30[x]	48[y]/3[y]	. .	99	98
91	Mauritius	9	. .	. .	. .	/.	. .	88	118
92	Uruguay	8	51[x]	21[x]	13[x]	/.	. .	105	99
93	Romania	6	. .	. .	. .	/.	. .	119	126
94	Yugoslavia	7	. .	. .	. .	/.	. .	109	141
	Low U5MR countries (under 30) Median	**6**	. .	. .	. .	. ./. .	. .	**107**	**129**
95	USSR	6	. .	. .	. .	/.	. .	101	132
96	Chile	9	. .	28[x]	3[x]	10/1	11	102	105
97	Trinidad and Tobago	. .	59[x]	50[x]	14[x]	/.	. .	60	129
98	Jamaica	12	57[x]	40[x]	16[x]	/.	14	89	111
99	Kuwait	7	. .	. .	. .	/.	3	. .	. .
100	Costa Rica	9	38[x]	20[x]	9[x]	46[y]/1[y]	. .	87	114
101	Portugal	8	. .	. .	. .	/.	. .	86	124
102	Bulgaria	6	. .	. .	. .	/.	. .	119	147
103	Hungary	10	45[x]	21[x]	4[x]	/.	. .	126	135
104	Poland	8	42[x]	32[x]	. .	/.	. .	94	127
105	Cuba	9	. .	. .	. .	/.	. .	129	126
106	Greece	6	. .	. .	. .	/.	. .	103	144
107	Czechoslovakia	6	. .	. .	. .	/.	. .	118	144
108	Israel	7	. .	. .	. .	/.	. .	98	121
109	New Zealand	5	. .	. .	. .	/.	. .	108	132
110	Austria	6	. .	. .	. .	/.	. .	118	132
111	Belgium	5	. .	. .	. .	/.	. .	104	140
112	German Dem. Rep.	6	. .	. .	. .	/.	. .	107	142
113	Italy	7	. .	. .	. .	/.	. .	111	140
114	USA	7	33	25	8	/.	. .	105	137
115	Germany, Fed. Rep. of	5	. .	. .	. .	/.	. .	116	130
116	Ireland	4	. .	. .	. .	/.	. .	101	143
117	Singapore	8	. .	. .	. .	/.	9	68	115
118	Spain	. .	. .	. .	. .	/.	. .	107	132
119	United Kingdom	7	. .	. .	. .	/.	. .	124	128
120	Australia	6	. .	. .	. .	/.	. .	105	115
121	France	5	. .	. .	. .	/.	. .	111	139
122	Hong Kong	8	. .	18[x]	. .	/.	. .	99	122
123	Canada	6	26[x]	13[x]	. .	/.	. .	118	130
124	Denmark	6	. .	. .	. .	/.	. .	122	131
125	Netherlands	4	17[x]	. .	. .	/.	. .	120	129
126	Norway	4	. .	. .	. .	/.	. .	117	115
127	Japan	5	. .	. .	. .	/.	. .	91	113
128	Switzerland	5	. .	. .	. .	/.	. .	117	129
129	Finland	4	. .	. .	. .	/.	. .	102	114
130	Sweden	4	. .	. .	. .	/.	. .	112	116

TABLE 3: HEALTH

		% of population with access to drinking water 1983	% of population with access to health services 1980–1983	Percentage fully immunized 1980–1981/1984–1985					No. of ORS packets per 100 children under 5 1984	% of births attended by trained health personnel 1984
				One year old children				Pregnant women		
		Total/urban/rural	Total/urban/rural	TB	DPT	Polio	Measles	Tetanus		
	Very high U5MR countries (over 175) Median	**31 / 65 /21**	**36/ . . /. .**	**22/32**	**13/20**	**8/20**	**21/30**	**5/11**	**46**	**22**
1	Afghanistan	10*/ 28*/ 8*	/ /	33/11	4/16	3/16	11/13	1/4	4	
2	Mali	14 / 46 / 8	/ /	19/13*	/2*	/2*	/13*	1/	115	
3	Sierra Leone	23 / 61 / 6	/ /	36/45†	13/9†	7/12†	36/21†	9/45*	34	25
4	Malawi	51 / 66 /49	80*/ /	86/72*	66/56*	68/55*	65/50*	/30*	18	59
5	Guinea	17*/ 69*/ 2*	/ /	4*/10†	/2†	/2†	15*/30†	5*/5†	9	
6	Ethiopia	/ / .	43*/ /	10/11*	6/6*	7/6*	7/12*	/4*	66	58
7	Somalia	31 / 65 /21	25*/ 50*/15*	6/31*	9/22*	8/22*	9/36*	0/10*	67	2
8	Mozambique	13†/ 50†/ 7†	30*/ /	46*/56*	56*/32*	32*/32*	32*/46*	40*/40*	28	28
9	Burkina Faso	30*/ 27*/31*	48*/ 51*/48*	16/33*	2/9*	2/9*	23/40*	11/5*	25	
10	Angola	28 / 90 /12	30*/ /	47†/30*	9†/19*	7†/13*	17†/44*	/9†	52	15
11	Niger	34 / 41 /33	40*/100*/30*	28/28*	6/4*	6/4*	19/22*	3/9*	152	47
12	Central African Rep.	16*/ / .	/ /	17/59†	13/24†	13/24†	12/30†	9/20*	72	. .
13	Chad	26*/ /	/ /	/15*	/3*	/3*	/7*	/5*	21	. .
14	Guinea-Bissau	33 / 21 /37	/ /	/45*	/16*	/15*	/30*	/16*	111	. .
15	Senegal	44 / 69 /27	/ /	22†/56†	34†/37†	34†/37†	22†/38†	/ .	29	. .
16	Mauritania	. / 80 / .	30*/ /	57/74*	18/21*	18/21*	45/59*	1/	38	23
17	Kampuchea	/ /	/ /	/59*	/23*	/26*	/29*	/21*	220	. .
18	Liberia	40 / 71 /20	/ /	/47*	39/43*	26/42*	/44*	60/38	10	89
19	Rwanda	60 / 55 /60	26*/ 60*/25*	51/73*	17/44*	15/50*	42/45*	5/20*	20	. .
20	Yemen	31 /100 /21	22*/ 70*/ 5*	12/18	16/8	16/8	23/11	/ .	35	12
21	Yemen, Dem.	50 / 73 /39	30*/ /	8/28*	4/15*	2/14*	1/14*	1/6	223	10
22	Bhutan	17 / 40 /14	19/ /	43/47*	6/53*	4/52*	21/38*	/35*	73	3
23	Nepal	15 / 71 /11	/ /	22/57	8/32*	2*/20*	2*/67*	1/10	42	10
24	Burundi	26 / 90 /22	31*/ 90*/30*	65/65*	38/36*	6/29*	30/42*	25*/25*	34	12
25	Bangladesh	42 / 29 /43	45*/ /	0/2*	0/2*	0/2*	0/2*	0/2*	61	. .
26	Benin	20*/ 26*/15*	40*/ /	37*/30*	20*/20*	45*/20*	6*/25*	/35*	26	34
27	Sudan	48 / /31	52*/ /40*	2/14*	1/9*	1/9*	1/7*	1/4*	113	20
28	Bolivia	43 / 78 /12	23*/ /	49/23	20/6	14/46	23*/20	/	230	. .
29	Tanzania, U. Rep. of	46 / 88 /39	70*/100*/66*	/53*	58/46*	56/46*	/58*	35/40*	190	74
30	Nigeria	37 / 60 /30	40*/ 75*/30*	23/25*	24*/25*	24*/25*	55/20*	11/11*	3	. .
31	Haiti	33 / 58 /25	/ /	19/61*	5/24*	2/24*	/26*	16/61*	64	20
32	Uganda	16*/ 90*/ 7*	61*/ 90*/57*	18/18*	9/8*	8/8*	22/22*	20/20*	50	. .
	High U5MR countries (95–174) Median	**52 / 78 /33**	**67/ 93 /39**	**53/75**	**36/53**	**37/59**	**27/52**	**7/16**	**39**	**50**
33	Pakistan	39 / 78 /24	50*/100*/32*	6/43*	2/32*	2/32*	1/25*	0/10*	83	24
34	Oman	. / / .	/ /	51/80	18/62*	18/62*	22/68*	39/27	119	60
35	Lao People's Dem. Rep.	21 / 28 /20	/ /	4/6*	7*/8*	7*/8*	7*/4*	2*/4*	60	. .
36	Zaire	19 / 43 / 5	20*/ 60*/17*	34/	18/16*	18/	20/22*	/	22	. .
37	Cameroon	26*/ . /.	/ /	8/68*	5/64*	5/64*	16/41*	/13*	7	. .
38	Iran (Islamic Rep. of)	. / / .	/ /20*	7/13	32/63*	38/63*	39/63*	1/23*	318	. .
39	Togo	37 / 68 /26	/ 25*/	44/55*	9/11*	9/11*	47/11*	57/11*	24	. .
40	India	54 / 80 /47	/ /	73/65	37/51	4/37	/	24/33	34	33
41	Côte d'Ivoire	20 / 30 /10	36*/ 61*/11*	/16†	42*/11†	34*/11†	28*/31†	25*/32*	22	. .
42	Ghana	43 / 72 /47	64*/ 92*/45*	9/41*	7/23*	7/18*	16/83*	3/2	221	73
43	Lesotho	14*/ 37*/11*	/ /	81/87*	56/65*	54/65*	49/63*	/0*	195	28
44	Egypt	75*/ 88*/64*	/ /	72/53*	84/57	84/67	78/41	0/20	67	24
45	Zambia	7 / 65 /33	75*/ /	72*/82*	44*/46*	77*/46*	21*/55*	/38*	20	. .
46	Peru	52 / 73 /18	/ /17*	48/70*	14/48*	16/48*	19*/53*	4/8*	39	44
47	Libyan Arab Jamahiriya	98*/100*/90*	/ / .	55/	55/	55/	57/	6/	. .	76
48	Morocco	. / / .	50*/ 93*/24*	45*/78*	43/46*	45/46*	/42*	/	76	. .
49	Indonesia	33 / 40 /29	/ /	62/65*	3†/26*	/25*	/26*	7/24*	22	31
50	Congo	29 / 42 / 7	/ /	92/80†	42/59†	42/59†	49/52†	/	17	. .
51	Kenya	28 / 61 /21	/ /	/75*	/58*	/57*	/55*	/	39	. .
52	Zimbabwe	52†/ . . /. .	71*/100*/62*	64/76*	39/63*	38/63*	56/53*	30†/40*	3	69
53	Algeria	90*/100*/80*	90/100 /80	59/83*	33/30*	30/32*	17/45*	/	94	. .
54	Honduras	69 / 91 /55	60*/ 85*/65*	26/41*	30/49*	32/75*	33*/49	8/25*	125	50
55	Tunisia	/100 / .	/ /	65/88†	36/80†	37/80†	65/84†	2/8*	163	60
56	Guatemala	51 / 90 /55	34*/ 47*/25*	43/41*	43/34†	43/33†	12/11*	/	49	. .
57	Saudi Arabia	93 /100 /68	97*/100*/88*	33/88*	41/81*	50/81*	8/79*	/	22	. .
58	Nicaragua	53 / 91 /10	80*/100*/60*	25/95*	18/39*	99/78*	15/27	31†/24*	203	. .
59	South Africa	/ / .	/ / .	/	/	/	/	/	. .	. .
60	Turkey	63†/ 63†/63†	/ / .	74*/24*	42/55*	63*/55*	27/61*	/4*	16	. .
61	Iraq	73†/ 97†/22†	/ / .	76/82*	13/74*	16/74*	35/22*	4/9*	31	60
62	Botswana	65 / 98 /47	89*/100*/85*	91/68*	70/68*	45/67*	63/69*	32/17*	. .	. .
63	Viet Nam	. / /31	/ /	/5*	/3*	/2*	/3*	/	25	100
64	Madagascar	23 / 73 / 9	60*/ / .	13/13*	35/35*	3/3*	/0*	/25*	18	62

Note: nations are listed in descending order of their 1985 under-five mortality rates (see table 1)

		% of population with access to drinking water 1983	% of population with access to health services 1980–1983	Percentage fully immunized 1980–1981/1984–1985					No. of ORS packets per 100 children under 5 1984	% of births attended by trained health personnel 1984
				One year old children				Pregnant women		
		Total/urban/rural	Total/urban/rural	TB	DPT	Polio	Measles	Tetanus		
	Middle U5MR countries (30–94) Median	**68 / 86 /47**	**75/ . . /. .**	**62/71**	**40/59**	**42/65**	**32/55**	**10/21**	**25**	**82**
65	Papua New Guinea	16 / 55 /10	/ /	62/67	50*/34	29/32	/24	/		34
66	Ecuador	59 / 98 /21	18*/ /	74/64	21/48	14/47	67*/54	2/11*	1	27
67	Brazil	76 / 86 /53	/ /	58/64*	40/64*	99*/86[y]	58/75	/	66	73
68	Burma	25 / 36 /21	50*/100*/31*	9/25	4/8	2*/2	/	4/12	79	97
69	El Salvador	51*/ 67*/40*	/ /	56/46*	43/55*	42*/55*	44/58*	26/	133	35
70	Dominican Rep.	60 / 85 /32	80*/ /	12/43	36/20	46/84[y]	29*/95[y]	85/25	22	98
71	Philippines	54 / 53 /55	/ /	94/66*	39*/51*	30/53*	10*/48*	/21*	51	
72	Mexico	74 / 91 /40	45*/ /	40/25	26/52	43/49	9*/75[y]	/	116	
73	Colombia	81*/ 84*/20*	75*/ /	40/73*	15/60*	16/61*	14/52*	2/6*	126	51
74	Syrian Arab Rep.	71*/ 98*/54*	75*/ 92*/60*	35/51*	13/38*	13/38*	13/35*	0/6*	1	37
75	Jordan	89*/100*/65*	/ /	0/2[y]	30/44	32/41	29/30	0/9	64	75
76	Mongolia	/ /	/ /	51/52	76/77	92/77	17/20	/	17	100
77	Paraguay	25 / 46 /10	56*/ 89*/44*	31/80	17/67	14/68	10/62	29/44*	19	22
78	Lebanon	92*/ 95*/85[y]	/ /	/	4*/4	9*/4	1*/	/	11	45
79	Thailand	65 / 50 /70	/ /	79/79*	17/64*	15/65*	/24*	26/40*	45	33
80	Albania	/ /	/ /	93/90	94/95	92/92	90/96	/		
81	China	/ 85[y] /	/ /	/	/	/	/	/		
82	Sri Lanka	36 / 76 /26	93*/ /	61/71*	46/70*	48/71*	/2	72/41*	37	87
83	Venezuela	/ /65	/ /	66/23	46/21	95/44	40/19	/	78	82
84	United Arab Emirates	93*/ 95*/81*	/ /	15/59	11/80*	11/80*	34/66	/	25	96
85	Guyana	80 /100 /60	/ /	68/77*	35/57*	42/56*	68*/27*	/57*	8	93
86	Argentina	63 / 72 /17	70*/ 80*/21*	64/76*	42/47*	31/64	60/75*	/	25	
87	Malaysia	80 / 97 /71	/ /	94/95*	58/58*	62/47*	/	/48*	23	82
88	Korea, Dem. Rep. of	/ /	/ /	/93	/91	/91	/	/		100
89	Korea, Rep. of	/ /60	95*/ 97*/86*	30*/84	70/69	89/78	4*/55[y]	/		
90	Panama	62 / 97 /26	81*/ 95*/64*	68/94*	46/73*	45/71*	47/83*	16/	7	83
91	Mauritius	95*/ 95*/95*	95*/ /	89/87*	87/93*	87/93*	34*/67*	1/20*	49	84
92	Uruguay	79 / 95 / 3	80*/ /	96/96*	53/67*	59*/81*	18*/63*	28/13*	12	
93	Romania	/ /	/ /	/	/	/	/83	/		99
94	Yugoslavia	/ /	/ /	99/85*	90/85*	95/85*	95*/95*	/		
	Low U5MR countries (under 30) Median	**. . / . . /. .**	**. . / . . /. .**	**90/90**	**84/90**	**90/92**	**70/75**	**. . /. .**	**. .**	**99**
95	USSR	/ /	/ /	/91	95/89	95/90	95*/	/		100
96	Chile	85 /100 /18	/ /	99/95*	85/91*	91/91*	88/92*	/	1	95
97	Trinidad and Tobago	99 /100 /96	/ /	1/	24/65	38/66	/10	/60[y]		90
98	Jamaica	86*/ /	/ /	38/50*	34/60*	34/58*	12*/69*	50*/50*	65	89
99	Kuwait	89*/ /	93*/ /	2/3	79/93*	81/93*	71/91[y]	7/20		99
100	Costa Rica	93 /100 /82	79*/100*/63*	79/88*	67/77*	67/74*	68/75*	/	7	93
101	Portugal	/ /	/ /	/76*	73/94*	18/74	64/46	/		
102	Bulgaria	/ /	/ /	97/99	97/99	98/99	98/98	98/		100
103	Hungary	/ /	/ /	99/99	99/99	98/98	99*/99	/		99
104	Poland	/ /	/ /	95/	95/95*	95/95*	65/75*	/		
105	Cuba	/ /	/ /	99/96	67/85	99/99*	48/80*	/		
106	Greece	/ /	/ /	95/56*	95/60	95/98	/70	/		
107	Czechoslovakia	/ /	/ /	95/99	95/99	95/98	95*/99	/		100
108	Israel	/ /	/ /	75/68*	84/86*	88/92*	69/83*	/		99
109	New Zealand	/ /	/ /	/	76*/73*	/72*	80*/	/		99
110	Austria	/ /	/ /	90/90	90/90	90/90	90*/25*	/		
111	Belgium	/ /	/ /	/	95/95	99/95	50*/	/		100
112	German Dem. Rep.	/ /	/ /	95/98	80/90	90/97	95/97	/		
113	Italy	/ /	/ /	/	/92*	/90*	/5	/		
114	USA	/ /	/ /	/	/	/	96*/	/		100
115	Germany, Fed. Rep. of	/ /	/ /	40/	50/	80/	35*/	/		
116	Ireland	/ /	/ /	/75	33/45*	65/91	/10	/		
117	Singapore	100 /100 /	/ /	98/74*	84/76*	83/79*	47*/67*	/90*		100
118	Spain	/ /	/ /	/	/	/	/38	/		96
119	United Kingdom	/ /	/ /	/74*	44/55*	71/83*	52*/58*	/		98
120	Australia	/ /	/ /	/	33/	17/	/	/		99
121	France	/ /	/ /	80/96	79/94	80/97	/25*	/		
122	Hong Kong	99 /100 /93	/ /	99/95*	77/85*	98*/90*	74/74[y]	/90*		
123	Canada	/ /	/ /	/	/	/	/	/		99
124	Denmark	/ /	/ /	95/85*	85/94	97/94	/	/		
125	Netherlands	/ /	/ /	/	97/97	97/97	92/92	/		
126	Norway	/ /	/ /	/90*	/90	/90	/80	/		100
127	Japan	/ /	/ /	85/90*	/81*	/95*	69*/66*	/		
128	Switzerland	/ /	/ /	/	/	/	/	/		
129	Finland	/ /	/ /	90/90*	92/94*	90/78*	70*/81*	/		
130	Sweden	/ /	/ /	/31*	99*/99*	99/99*	56*/87*	/		100

TABLE 4: EDUCATION

		Adult literacy rate		No. of radio receivers per 1,000 population	Primary school enrolment ratio			% of grade 1 enrolment completing primary school	Secondary school enrolment ratio
		1970 male/female	1985 male/female	1983	1960 (gross) male/female	1982–84 (gross) male/female	1982–84 (net) male/female	1980–1984	1982–1984 male/female
	Very high U5MR countries (over 175) Median	**26/8**	**42/21**	**51**	**35/15**	**65/41**	**50/38**	**49**	**17/8**
1	Afghanistan	13/2	39/8	78	15/2	19/9	16/8	54	11/5
2	Mali	11/4	23/11	16	14/6	30/18	/.	61[y]	10/4
3	Sierra Leone	18/8	38/21	202	30/15	46[y]/32[y]	37[y]/26[y]	48[y]	23[y]/10[y]
4	Malawi	42/18	52/31	48	/45	76/54	50/42	28	6/2
5	Guinea	21/7	40/17	31	44/16	49/23	35/16	. .	21/8
6	Ethiopia	8/1	/.	98	11/3	58/34	/.	49*	17/9
7	Somalia	5/1	18/6	25	13/5	28/15	21/11	33*	19/10
8	Mozambique	29/14	55/22	21	60/36	91/68	51/41	26	8/4
9	Burkina Faso	13/3	21/6	18	12/5	34/20	28/16	75	5/3
10	Angola	16/7	49/.	19	/.	146/121	71/61	24	/.
11	Niger	6/2	19/9	49	7/3	34[y]/19[y]	/.	67[y]	/.
12	Central African Rep.	26/6	53/29	57	53/12	98/51	80/42	53	24/8
13	Chad	20/2	40/11	219	29/4	55/21	/.	29[y]	11/2
14	Guinea-Bissau	13/6	46/17	32	35/15	88/40	76/35	18	17/4
15	Senegal	18/5	37/19	70	36/17	63/42	50/34	86	17/8
16	Mauritania	/.	/.	101	13/3	45/29	/.	80	19/6
17	Kampuchea	/23	/.	131	/.	/.	/.	. .	/.
18	Liberia	27/8	47/23	185	45/18	95*/57*	/.	. .	33*/13*
19	Rwanda	43/21	61/33	53	68/30	64/60	60/57	47	3/1
20	Yemen	9/1	27/3	20	14/.	107/21	/.	15*	16/2
21	Yemen, Dem.	31/9	59/25	61	20/5	97/36	/.	40*	26/11
22	Bhutan	/.	/.	9	5/.	32/17	/.	25[y]	6/1
23	Nepal	23/3	39/12	25	19/1	100/43	/.	27*	34/10
24	Burundi	29/10	43*/26*	40	27/9	55/36	42/29	. .	5/3
25	Bangladesh	36/12	43/22	8	66/26	67/55	60/50	20	26/11
26	Benin	23/8	37/16	78	38/15	92/43	/.	63	32/12
27	Sudan	28/6	41*/21*	246	35/14	59/42	/.	69	21/15
28	Bolivia	68/46	84/65	575	78/50	94/81	82*/72*	32*	38/32
29	Tanzania, U. Rep. of	48/18	90*/80*	29	33/18	91/84	62/61	76	4/2
30	Nigeria	35/14	54/31	79	46/27	/.	/.	. .	/.
31	Haiti	26/17	40/35	23	50/42	74*/64*	42*/38*	45[y]	13*/12*
32	Uganda	52/30	70/45	22	. /32	65/49	43/37	58[y]	10/5
	High U5MR countries (95–174) Median	**49/20**	**68/50**	**138**	**67/39**	**101/88**	**85/78**	**70**	**38/25**
33	Pakistan	30/11	40/19	78	46/13	63*/32*	/.	35*	22*/6*
34	Oman	/.	/.	619	/.	94/72	75/56	60[y]	38/19
35	Lao People's Dem. Rep.	37/28	92/76	95	34/16	94[y]/80[y]	/.	. .	20[y]/13[y]
36	Zaire	61/22	79/45	96	88/32	103*/74*	/.	65[y]	33*/13*
37	Cameroon	47/19	68/55	89	87/43	117/98	/.	67[y]	27/16
38	Iran (Islamic Rep. of)	40/17	62/39	180	56/27	113/88	91/75	70*	47/33
39	Togo	27/7	53/28	214	63/24	124/80	84/56	43	36/12
40	India	47/20	57/29	61	80/40	100/68	/.	38*	44/24
41	Côte d'Ivoire	26/10	53/21	129	68/24	93/64	/.	89*	27/11
42	Ghana	43/18	64/43	173	52/25	89/70	/.	75[y]	48/28
43	Lesotho	49/74	62/84	34	63/102	94/126	60/82	38[y]	16/23
44	Egypt	50/20	59/30	174	80/52	101/76	/.	64	67/45
45	Zambia	66/37	84/67	27	51/34	100/89	/.	85	22/12
46	Peru	81/60	91/78	160	95/71	120/112	95*/91*	70	64/57
47	Libyan Arab Jamahiriya	60/13	81/50	223	92/24	/.	/.	82	. /. .
48	Morocco	34/10	45/22	163	67/27	97/61	70/46	80	35/24
49	Indonesia	66/42	83/65	138	86/58	118/112	97/93	68	42/31
50	Congo	50/19	71/55	61	103/53	. /.	/.	74	. /. .
51	Kenya	44/19	70/49	34	64/30	104/97	/.	62	23/16
52	Zimbabwe	63/47	81/67	45	. /.	136/137	99/99	77*	46/31
53	Algeria	39/11	63/37	215	55/37	106/82	92/74	77	50/35
54	Honduras	55/50	61/58	49	68/67	101/101	86/86	27*	31/34
55	Tunisia	44/17	68/41	163	88/43	125/102	99/85	78	40/26
56	Guatemala	51/37	63/47	43	50/39	78/67	63/56	38	16/15
57	Saudi Arabia	15/2	35*/12*	295	22/2	81/56	64/41	79	42/28
58	Nicaragua	58/57	. /. .	278	65/66	113*/118*	72/74	27	38/47
59	South Africa	. /. .	. /. .	282	94/85	/.	/.	. .	. /. .
60	Turkey	69/35	86/62	123	90/58	116/107	/.	85*	47/28
61	Iraq	50/18	70/87	188	94/36	113/99	97/88	87[y]	70/39
62	Botswana	37/44	73/69	119	35/48	89/102	71/81	73	19/23
63	Viet Nam	. /. .	91*/78*	. .	. /. .	120[y]/105[y]	/.	47[y]	53[y]/43[y]
64	Madagascar	56/43	74/62	213	58/45	78*/71*	/.	50	. /. .

Note: nations are listed in descending order of their 1985 under-five mortality rates (see table 1)

		Adult literacy rate		No. of radio receivers per 1 000 population 1983	Primary school enrolment ratio			% of grade 1 enrolment completing primary school 1980-1984	Secondary school enrolment ratio 1982-1984 male/female
		1970 male/female	1985 male/female		1960 (gross) male/female	1982-84 (gross) male/female	1982-84 (net) male/female		
	Middle U5MR countries (30–94) Median	**81/71**	**89/84**	**201**	**99/90**	**106/100**	. . / . .	**72**	**55/56**
65	Papua New Guinea	39/24	55/35	67	59/7	68/55	/	67[a]	15/8
66	Ecuador	75/68	85/80	319	87/79	117/114	/	62[b]	53/54
67	Brazil	69/63	79/76	386	97/93	106/99	80[a]/79[a]	20[a]	31[a]/36[a]
68	Burma	85/57	/	23	61/52	75[a]/70[a]	66[a]/64[a]	27[a]	22[a]/18[a]
69	El Salvador	61/53	75/69	362	82/77	69/69	64/63	68[a]	23/25
70	Dominican Rep.	69/65	78/77	201	99/98	104/115	/	72[a]	/
71	Philippines	83/80	86/85	45	98/93	115/113	97/98	72	61/66
72	Mexico	78/69	92/88	290	82/77	120/117	/	66	56/53
73	Colombia	79/76	89/87	133	77/77	119/122	/	37[a]	48/49
74	Syrian Arab Rep.	60/20	76/43	195	89/39	114/96	99/86	87	67/54
75	Jordan	64/29	87/63	191	94/59	101/98	91/88	97	79/77
76	Mongolia	87/74	93[a]/86[a]	101	79/78	105/107	/	95[b]	82/90
77	Paraguay	84/75	91/85	75	105/90	107/99	92/89	48[b]	37/35
78	Lebanon	79/58	86/69	797	105/99	115/105	/	/	61/63
79	Thailand	86/72	94/88	146	88/79	101[a]/97[a]	/	43[b]	29[b]/28[b]
80	Albania	/	/	168	102/86	104/97	/	/	72/61
81	China	/	82/56	67	/	116/93	/	66[a]	41/27
82	Sri Lanka	85/69	91/83	117	100/90	103/99	/	91	54/58
83	Venezuela	79/71	88/85	405	100/100	106/104	/	68[b]	37/46
84	United Arab Emirates	24/7	58[a]/38[a]	341	/	94/95	73/74	97	49/61
85	Guyana	94/89	97/95	381	107/106	99/99	89/91	84	58/62
86	Argentina	94/92	96/95	540	98/99	107/107	/	66[b]	57/62
87	Malaysia	71/48	81/66	437	108/83	100/98	/	97	50/49
88	Korea, Dem. Rep. of	/	/	/	/	118[a]/114[a]	/	/	/
89	Korea, Rep. of	94/81	96[a]/88[a]	451	99/89	104/102	99/99	94	92/86
90	Panama	81/81	89/88	160	98/94	106/101	87/87	73	55/62
91	Mauritius	77/59	89/77	211	103/93	112/112	98/99	/	53/49
92	Uruguay	93/93	93[a]/94[a]	573	111/111	110/107	/	88	59[a]/61[a]
93	Romania	96/91	/	143	101/95	100/99	/	/	58/68
94	Yugoslavia	92/76	97/86	238	113/108	101/101	/	98	84/80
	Low U5MR countries (under 30) Median	**94/89**	**97/93**	**404**	**105/103**	**102/101**	**97/97**	**95**	**83/84**
95	USSR	98/97	/	665	100/100	/	/	/	/
96	Chile	90/88	97[a]/96[a]	304	111/107	112/110	94/95	52[a]	62/68
97	Trinidad and Tobago	95/89	97/95	309	89/87	107/108	97[a]/97[a]	78	69/72
98	Jamaica	96/97	/	394	92/93	106/107	94/96	80	56/60
99	Kuwait	65/42	76/63	285	131/102	96/94	81/77	98	86/79
100	Costa Rica	88/87	94/93	86	97/95	103/100	88/89	75	41/46
101	Portugal	78/65	89/80	171	132/129	122/123	82/81	88[a]	41/46
102	Bulgaria	94/89	/	230	94/92	100/100	97/97	87	85/85
103	Hungary	98/98	/	540	103/100	101/101	99/99	93	74/73
104	Poland	98/97	/	247	110/107	101/100	99/99	94	73/78
105	Cuba	86/87	96[a]/96[a]	316	109/109	111/105	97/97	86	71/77
106	Greece	93/76	97/88	406	104/101	105/105	95[a]/96[a]	93	84/80
107	Czechoslovakia	/	/	270	93/93	88/89	/	94	33/57
108	Israel	93/83	97/93	270	99/97	95/97	89/91	/	73/83
109	New Zealand	/	/	890	110/106	103/101	97/97	/	86/88
110	Austria	99/99	/	530	106/104	100/98	/	95	72/76
111	Belgium	/	/	468	111/108	96/97	93/94	75	110/105
112	German Dem. Rep.	/	/	384	111/113	94/96	/	/	91/86
113	Italy	95/93	98/96	250	112/109	103/102	/	100	75/74
114	USA	99/99	/	2043	/	/	/	/	/
115	Germany, Fed. Rep. of	/	/	401	/	/	/	/	/
116	Ireland	/	/	456	107/112	97[a]/97[a]	/	96	/
117	Singapore	82/55	93/79	272	121/101	115/111	/	/	88[a]/98[a]
118	Spain	93/87	97/92	285	106/116	112/110	100/100	90	68/69
119	United Kingdom	/	/	993	92/92	100/101	100/100	95	88/93
120	Australia	/	/	1301	103/103	105/104	92/93	/	83/86
121	France	99/98	/	860	144/143	109/107	96/96	/	/
122	Hong Kong	90/64	95/81	510	93/79	107/104	97/97	95	91/93
123	Canada	/	/	761	108/105	105/102	96/95	98	83/95
124	Denmark	/	/	392	103/103	100/101	95/94	/	65/70
125	Netherlands	/	/	793	105/104	95/97	/	99	102/101
126	Norway	/	/	412	100/100	98/99	/	95	106/104
127	Japan	99/99	/	713	103/102	100/100	98[a]/99[a]	/	103/99
128	Switzerland	/	/	364	118/118	/	100/100	100	/
129	Finland	/	/	987	100/95	102/101	/	100	94/99
130	Sweden	/	/	858	95/96	98/99	97[a]/97[a]	99	93/95
								98	/
									95/111
									80/90

TABLE 5: DEMOGRAPHIC INDICATORS

		Population under 16/under 5 (millions) 1985	Population annual growth rate (%) 1973-1984	Crude death rate 1960	Crude death rate 1985	Crude birth rate 1960	Crude birth rate 1985	Life expectancy 1960	Life expectancy 1985	Total fertility rate 1985	% population urbanized 1985	Average annual growth rate of urban population (%) 1973-84
	Very high U5MR countries (over 175) Median	**221T/86T**	**2.6**	**28**	**19**	**48**	**47**	**37**	**46**	**6.5**	**22**	**5.4**
1	Afghanistan	7.3/2.7		30	26	52	48	34	38	6.8	19	
2	Mali	3.9/1.6	2.6	29	22	50	50	35	43	6.7	18	4.5
3	Sierra Leone	1.6/0.6	2.1	35	29	48	47	30	35	6.1	28	3.5
4	Malawi	3.4/1.3	3.1	28	21	53	53	38	46	7.0	12	7.3
5	Guinea	2.7/1.1	2.0	33	23	48	47	33	41	6.2	22	6.2
6	Ethiopia	20.5/8.1	2.8	28	23	51	49	36	41	6.7	12	6.1
7	Somalia	2.2/0.9	3.0	28	23	47	48	36	41	6.6	34	5.4
8	Mozambique	6.3/2.4	2.6	21	19	45	45	40	46	6.1	19	10.2
9	Burkina Faso	3.2/1.2	1.8	31	19	50	48	35	46	6.5	8	4.8
10	Angola	4.1/1.6	3.1	31	21	50	47	33	43	6.4	25	6.0
11	Niger	3.0/1.2	3.0	31	22	46	51	35	44	7.1	16	7.1
12	Central African Rep.	1.1/0.4	2.3	30	21	44	44	37	44	5.9	42	4.6
13	Chad	2.2/0.9	2.1	30	21	46	44	35	46	5.9	27	6.5
14	Guinea-Bissau	0.4/0.1		28	21	41	41	36	44	5.4	27	
15	Senegal	3.0/1.2	2.9	27	20	48	46	37	44	6.5	36	3.8
16	Mauritania	0.9/0.4	2.1	28	20	51	50	36	45	6.9	35	5.1
17	Kampuchea	2.6/1.3		21	18	45	44	42	46	4.9	11	
18	Liberia	1.1/0.4	3.3	24	16	46	48	40	50	6.9	40	6.0
19	Rwanda	3.1/1.2	3.3	22	18	51	51	42	48	7.4	6	6.6
20	Yemen	3.4/1.3	2.8	29	17	50	48	37	50	6.9	20	8.8
21	Yemen, Dem.	1.0/0.4	2.3	29	17	50	47	37	50	6.7	40	3.5
22	Bhutan	0.6/0.2	1.9	25	18	43	38	38	47	5.4	4	4.6
23	Nepal	7.5/2.7	2.6	26	18	46	41	38	47	6.0	8	8.4
24	Burundi	2.2/0.9	2.2	25	18	44	46	42	48	6.4	25	3.3
25	Bangladesh	48.6/17.9	2.5	22	17	47	43	40	49	5.8	12	7.7
26	Benin	2.0/0.8	2.8	33	20	47	51	35	45	7.0	35	5.0
27	Sudan	10.2/3.9	2.9	25	16	47	45	39	49	6.5	21	5.5
28	Bolivia	2.9/1.1	2.6	22	15	46	43	43	52	6.2	48	3.6
29	Tanzania, U. Rep. of	11.5/4.5	3.4	24	15	51	50	41	52	7.1	22	8.6
30	Nigeria	48.1/19.0	2.8	24	16	52	50	40	50	7.1	23	5.2
31	Haiti	3.0/1.1	1.7	23	14	45	41	42	54	5.7	27	4.2
32	Uganda	7.8/3.1	3.2	21	16	50	50	43	50	6.9	10	−0.1
	High U5MR countries (95–174) Median	**621T/216T**	**3.0**	**21**	**12**	**47**	**42**	**44**	**57**	**6.0**	**40**	**5.5**
33	Pakistan	46.1/17.4	2.9	24	15	49	42	43	51	5.6	30	4.4
34	Oman	0.6/0.2	4.5	28	13	51	46	40	54	7.0	9	17.6
35	Lao People's Dem.Rep.	1.8/0.7	1.6	19	15	42	39	44	53	5.6	16	5.7
36	Zaire	14.2/5.4	3.0	22	15	47	45	42	51	6.1	37	7.1
37	Cameroon	4.5/1.7	3.1	24	15	44	43	40	52	5.8	42	8.2
38	Iran (Islamic Rep of.)	20.1/7.3	3.1	19	11	53	40	50	58	5.4	52	5.0
39	Togo	1.4/0.5	2.8	27	15	48	45	39	52	6.1	22	6.5
40	India	296.0/99.2	2.3	21	12	42	30	44	57	4.0	26	4.2
41	Côte d'Ivoire	4.7/1.7	4.5	26	15	44	45	39	52	6.7	42	8.3
42	Ghana	6.6/2.6	2.6	21	14	47	47	45	53	6.5	32	5.3
43	Lesotho	0.7/0.3	2.4	24	16	41	42	40	50	5.8	17	20.1
44	Egypt	19.6/7.1	2.6	21	11	45	35	46	59	4.6	46	3.0
45	Zambia	3.3/1.3	3.2	23	14	50	48	42	52	6.8	50	6.4
46	Peru	8.4/3.0	2.4	19	10	47	36	48	60	4.7	67	3.6
47	Libyan Arab Jamahiriya	1.8/0.7	4.1	19	10	49	45	47	60	7.0	65	7.9
48	Morocco	9.5/3.3	2.4	21	10	50	34	47	60	4.7	45	4.2
49	Indonesia	68.3/22.6	2.3	23	12	44	30	41	55	3.8	25	4.5
50	Congo	0.8/0.3	4.1	25	18	45	44	38	48	6.0	40	5.4
51	Kenya	11.3/4.5	4.0	24	13	57	55	42	54	8.1	20	7.9
52	Zimbabwe	4.4/1.7	3.2	19	12	47	47	45	57	6.6	25	6.1
53	Algeria	10.4/3.8	3.1	21	10	51	42	47	61	6.4	43	5.4
54	Honduras	2.2/0.8	3.5	19	9	51	42	47	61	6.0	40	5.7
55	Tunisia	2.9/1.0	2.4	19	9	47	32	48	62	4.5	57	3.8
56	Guatemala	3.8/1.4	2.8	20	10	49	42	46	61	5.9	40	4.1
57	Saudi Arabia	5.4/2.1	4.9	23	8	49	41	44	62	7.0	72	7.3
58	Nicaragua	1.6/0.6	3.0	18	9	51	43	47	62	5.7	57	5.2
59	South Africa	14.0/5.2	2.4	21	13	41	38	44	55	5.0	56	3.7
60	Turkey	19.0/6.4	2.2	16	9	43	30	51	63	3.8	46	4.0
61	Iraq	7.8/3.0	3.6	20	8	49	43	49	63	6.4	71	5.5
62	Botswana	0.6/0.2	4.4	20	12	52	49	46	56	6.5	19	11.3
63	Viet Nam	24.9/8.0	2.6	23	10	41	30	44	60	4.0	20	2.3
64	Madagascar	4.6/1.8	2.8	23	16	44	44	41	51	6.1	22	5.5

Note: nations are listed in descending order of their 1985 under-five mortality rates (see table 1)

		Population under 16/under 5 (millions) 1985	Population annual growth rate (%) 1973-1984	Crude death rate 1960	Crude death rate 1985	Crude birth rate 1960	Crude birth rate 1985	Life expectancy 1960	Life expectancy 1985	Total fertility rate 1985	% population urbanized 1985	Average annual growth rate of urban population (%) 1973-84
	Middle U5MR countries (30–94) Median	**643T/177T**	**2.4**	**14**	**8**	**43**	**30**	**55**	**67**	**3.7**	**52**	**3.8**
65	Papua New Guinea	1.5/0.6	2.6	23	13	44	37	41	53	5.5	14	6.1
66	Ecuador	4.1/1.5	2.9	15	8	46	36	53	65	4.8	52	3.9
67	Brazil	52.2/18.1	2.3	13	8	43	30	55	64	3.6	73	4.0
68	Burma	14.8/4.9	2.0	21	10	42	30	44	59	3.9	24	4.0
69	El Salvador	2.6/1.0	3.0	17	8	48	39	50	66	5.3	39	3.6
70	Dominican Rep	2.7/0.9	2.4	17	8	49	32	51	64	3.9	56	4.7
71	Philippines	23.3/8.0	2.7	15	8	46	32	46	63	4.2	40	3.7
72	Mexico	35.3/11.8	2.9	12	7	45	33	57	66	4.3	70	4.0
73	Colombia	11.3/3.9	2.0	13	8	45	30	55	64	3.8	67	2.9
74	Syrian Arab Rep	5.3/2.1	3.4	18	8	47	46	50	64	7.0	50	4.3
75	Jordan	1.8/0.7	2.8	20	7	47	46	47	65	7.3	64	4.7
76	Mongolia	0.8/0.3	2.8	15	8	41	35	52	63	5.0	51	4.1
77	Paraguay	1.6/0.6	2.5	13	7	43	35	56	66	4.7	44	3.2
78	Lebanon	1.1/0.3		14	8	43	29	60	66	3.6	80	
79	Thailand	19.9/6.4	2.2	15	8	39	26	52	63	3.1	20	3.1
80	Albania	1.1/0.4	2.0	11	6	41	27	62	72	3.4		
81	China	341.4/93.3	1.4	19	7	37	19	47	69	2.3	21	2.9
82	Sri Lanka	5.9/2.1	1.8	9	6	36	26	62	69	3.1	21	3.5
83	Venezuela	7.2/2.6	3.3	10	5	45	32	60	69	3.9	87	4.3
84	United Arab Emirates	0.4/0.2	10.7	19	4	46	27	53	68	5.7	78	10.4
85	Guyana	0.4/0.1		10	6	42	27	60	69	3.0	32	
86	Argentina	10.0/3.5	1.6	9	9	24	24	65	70	3.3	85	2.1
87	Malaysia	6.2.0/2.2	2.4	24	6	44	29	54	68	3.6	38	3.6
88	Korea, Dem. Rep. of	8.3/2.8	2.6	13	6	41	30	54	68	3.8	64	4.1
89	Korea, Rep. of	13.7/4.4	1.5	14	6	43	23	54	68	2.6	65	3.1
90	Panama	0.9/0.3	2.3	10	5	41	27	61	72	3.3	52	4.6
91	Mauritius	0.4/0.1	1.4	10	6	44	24	59	67	2.6	42	3.4
92	Uruguay	0.9/0.3	0.5	10	10	22	19	68	71	2.7	85	0.8
93	Romania	6.2/1.9	0.8	9	10	20	17	65	71	2.4	49	
94	Yugoslavia	5.9/1.8	0.8	10	9	23	16	63	71	2.1	46	2.7
	Low U5MR countries (under 30) Median	**278T/88T**	**0.9**	**9**	**10**	**21**	**15**	**69**	**74**	**1.9**	**74**	**1.4**
95	USSR	73.2/25.0	0.9	7	9	24	19	68	72	2.4	66	−3.0
96	Chile	3.9/1.3	1.7	12	7	37	22	57	70	2.5	84	2.4
97	Trinidad and Tobago	0.4/0.1	1.5	8	7	38	25	64	69	2.8	64	1.2
98	Jamaica	0.9/0.3	1.2	10	5	39	27	63	74	3.1	54	2.7
99	Kuwait	0.8/0.3	5.8	10	3	44	37	60	72	5.9	94	7.7
100	Costa Rica	1.0/0.4	2.9	10	4	47	30	62	73	3.4	50	3.3
101	Portugal	12.7/0.8	1.0	7	10	24	17	63	72	2.1	31	2.5
102	Bulgaria	2.2/0.7	0.3	9	11	18	15	69	72	2.2	67	2.1
103	Hungary	2.5/0.7	0.2	10	13	16	13	68	71	1.8	56	1.4
104	Poland	9.9/3.3	0.9	8	10	24	17	67	72	2.2	61	1.8
105	Cuba	2.9/0.8	0.7	9	7	32	17	64	74	2.0	72	1.6
106	Greece	2.3/0.7	1.0	8	10	19	15	69	74	2.1	60	2.5
107	Czechoslovakia	4.0/1.2	0.5	10	12	17	15	70	72	2.1	65	1.7
108	Israel	1.4/0.5	2.2	6	7	27	22	69	75	3.0	90	2.7
109	New Zealand	0.9/0.3	0.6	9	8	26	16	71	74	1.9	84	0.9
110	Austria	1.5/0.5	0.0	12	13	18	12	69	73	1.6	56	0.6
111	Belgium	2.0/0.6	0.1	12	12	17	12	70	74	1.6	96	1.2
112	German Dem. Rep.	3.5/1.2	−0.1	13	13	17	14	70	73	1.9	77	0.2
113	Italy	12.0/3.2	0.3	10	11	18	11	69	75	1.6	67	1.0
114	USA	55.6/18.7	1.0	9	9	24	16	70	75	1.9	74	1.3
115	Germany, Fed. Rep. of	10.2/3.0	−0.1	11	12	17	10	70	74	1.4	86	0.3
116	Ireland	1.1/0.4	1.3	12	9	21	21	70	73	3.0	57	2.2
117	Singapore	0.7/0.2	1.3	8	5	38	17	65	73	1.7	100	1.3
118	Spain	10.0/2.7	1.0	9	9	21	15	69	75	2.1	76	2.0
119	United Kingdom	11.8/3.7	(.)	12	12	17	13	71	74	1.8	92	0.2
120	Australia	4.0/1.2	1.3	9	8	22	16	71	75	1.9	86	1.5
121	France	12.5/3.9	0.5	12	11	18	14	70	75	1.9	73	1.2
122	Hong Kong	1.4/0.4	2.4	7	6	35	17	65	76	1.9	92	2.6
123	Canada	5.8/1.9	1.2	8	7	27	15	71	76	1.7	76	1.2
124	Denmark	1.0/0.3	0.2	9	11	17	11	72	75	1.5	86	0.6
125	Netherlands	3.1/0.9	0.7	8	9	21	12	73	76	1.5	88	−1.0
126	Norway	0.9/0.3	0.4	9	11	18	12	73	76	1.6	73	2.7
127	Japan	28.2/7.7	0.9	7	7	18	13	68	77	1.8	76	1.4
128	Switzerland	1.2/0.4	0.1	10	10	18	11	71	76	1.5	58	0.8
129	Finland	1.0/0.3	0.4	9	10	19	13	68	74	1.6	64	1.9
130	Sweden	1.6/0.5	0.2	10	12	14	11	73	76	1.6	84	0.7

TABLE 6: ECONOMIC INDICATORS

		GNP per capita (US $) 1984	GNP per capita average annual growth rate (%) 1965–84	1980–84	Rate of inflation (%) 1973–1984	% of population below absolute poverty level 1977–1984 urban/rural	% of central gov't expenditure allocated to health/education/defence 1983	ODA inflow in millions US $ (1984) as % of recipient GNP (1984)	Debt service as % of exports of goods and services 1970	1984
	Very high U5MR countries (over 175) Median	**260**	**1.0**	**−1.1**	**10.7**	**30/65**	**4.7/13.4/9.5**	**162/8.8**	**4.1**	**10.0**
1	Afghanistan			−2.3*		18/36	/ /	7/		
2	Mali	140	1.1	1.9	10.4	27*/44*	2.5/10.1/7.9	320/32.0	1.4	8.0
3	Sierra Leone	310	0.6	1.1	15.4	/65	6.2/14.8/4.2	61/6.2	9.9	7.2
4	Malawi	180	1.7	1.4	9.4	25/85	6.8/13.4/6.2	159/13.8	7.2	. .
5	Guinea	330	1.1	0.5	4.5	/	/ /	123/6.3	. .	. .
6	Ethiopia	110	0.4	−0.5	4.4	60*/65*	/ /	363/7.7	11.4	13.8
7	Somalia	260		−0.4	20.2	40/70	/ /	363/	2.1	28.9
8	Mozambique	230*		2.2		/	/ /	259/	. .	. .
9	Burkina Faso	160	1.2	−2.1	10.6	/	6.8/19.6/20.7	188/19.7	6.2	. .
10	Angola	470		3.8		/	/ /	93/	. .	. .
11	Niger	190	1.3	−4.6	11.5	/35*	/ /	162/14.8	3.8	. .
12	Central African Rep.	260	0.1	2.8	13.8	/	/ /	114/18.8	4.8	8.0
13	Chad	80*		12.3*		30/56	/ /	115/	3.9	1.7
14	Guinea-Bissau	190		−0.9		/	/ /	/	. .	. .
15	Senegal	380	−0.5	0.7	9.0	/	4.7/17.6/9.7	333/14.8	2.8	. .
16	Mauritania	450	0.3	1.0	7.7	/	/ /	168/24.6	3.1	10.0
17	Kampuchea					/	/ /	17/	. .	. .
18	Liberia	470	0.5	−5.0	6.7	23/	7.3/15.8/7.9	133/13.6	8.1	8.6
19	Rwanda	280	2.3	1.6	10.5	30/90*	/ /	165/10.2	1.2	3.3
20	Yemen	550	5.9	2.7	12.6	/	4.9/12.9/17.0	314/8.2	. .	26.6
21	Yemen, Dem.	550		−2.1		/20	/ /	85/7.3	0.0	22.0
22	Bhutan	80*		1.3			/ /	18/6.0	. .	. .
23	Nepal	160	0.2	0.6	8.1	55/65	4.5/9.9/5.4	198/7.9	. .	3.4
24	Burundi	220	1.9	−0.5	12.2	55/85	/ /	141/150	2.4	. .
25	Bangladesh	130	0.6	−0.7	9.9	86/86	/ /	1202/9.3	. .	14.2
26	Benin	270	1.0	0.9	10.8	/65	/ /	77/8.0	2.3	. .
27	Sudan	360	1.2	−2.4	19.3	/85*	1.3/6.1/9.5	616/	10.6	13.6
28	Bolivia	540	0.2	−8.0	54.5	/85*	3.1/26.9/10.8	172/5.5	11.4	38.3
29	Tanzania, U. Rep. of	210	0.6	−4.6	11.5	15*/25*	/ /	559/14.7	4.9	. .
30	Nigeria	730	2.8	−6.9	13.0	/	/ /	33/0.0	4.2	25.4
31	Haiti	320	1.0	−0.9	7.2	55/78	/ /	135/7.5	7.7	5.6
32	Uganda	230	2.9	0.6	64.5	/	4.6/12.9/17.0	164/3.3	2.7	. .
	High U5MR countries (95–174) Median	**740**	**2.1**	**0.1**	**12.1**	**27/42**	**4.7/15.8/13.5**	**156/4.2**	**6.4**	**15.3**
33	Pakistan	380	2.5	3.4	10.8	32/29	1.0/3.1/3.4.8	698/2.1	23.6	26.7
34	Oman	6490	6.1	3.7	16.4	/	3.5/6.4/51.3	72/1.0	. .	4.6
35	Lao People's Dem. Rep.	80*				/	/ /	34/	. .	. .
36	Zaire	140	−1.6	−0.7	48.2	/80*	3.2/16.3/7.9	314/10.1	4.4	7.7
37	Cameroon	800	2.9	3.5	12.8	15/40	3.7/13.2/9.6	188/2.5	3.1	8.9
38	Iran (Islamic Rep. of)			−0.9*		/	5.7/13.9/8.7	13/	. .	. .
39	Togo	250	0.5	−3.1	8.2	42/	5.7/19.6/6.8	110/26.7	4.8	8.0
40	India	260	1.6	3.1	7.8	40/51	2.4/1.9/20.0	1547/0.8	22.0	10.1
41	Côte d'Ivoire	610	0.2	−4.2	11.7	30*/26*	/ /	128/2.2	6.8	21.3
42	Ghana	350	−1.9	−3.6	52.2	59*/37*	5.8/18.7/6.2	216/5.7	5.0	13.2
43	Lesotho	530	5.9	2.7	11.9	50/55	7.2/17.4/	97/17.6	4.1	5.1
44	Egypt	720	4.3	4.6	13.1	21*/25*	2.8/10.7/15.7	1764/5.5	36.4	31.9
45	Zambia	470	−1.3	−2.2	10.4	25/	8.4/15.2/	238/9.8	5.9	11.3
46	Peru	1000	−0.1	1.9	56.7	49/	6.2/18.5/27.6	310/1.9	11.6	15.3
47	Libyan Arab Jamahiriya	8520	−1.1	−7.9	10.8	/	/ /	/	. .	. .
48	Morocco	670	2.8	0.1	8.3	28/45	2.9/18.6/14.9	286/2.3	8.4	37.6
49	Indonesia	540	4.9	3.6	17.4	26/44	2.2/9.4/11.7	673/0.9	6.9	14.7
50	Congo	1140	3.7	10.7	12.3	/	/ /	98/5.3	11.0	20.5
51	Kenya	310	2.1	−1.2	10.8	10/55	7.0/20.6/13.8	431/7.5	5.4	21.5
52	Zimbabwe	760	1.5	3.2	11.4	/	6.1/21.5/18.3	298/5.8	2.3	20.0
53	Algeria	2410	3.6	3.4	12.2	20/	/ /	122/0.2	2.9	13.4
54	Honduras	700	0.5	−2.4	8.6	14/55	/ /	290/9.6	3.1	15.2
55	Tunisia	1270	4.4	2.4	9.9	20/15	/ /	180/2.2	19.0	24.4
56	Guatemala	1160	2.0	−2.7	9.4	21/25	/ /	65/0.7	7.4	15.4
57	Saudi Arabia	10530	5.9	−4.4	14.1	/	/ /	/	. .	. .
58	Nicaragua	860	−1.5	−0.3	17.2	21/19	/ /	114/4.2	10.5	17.5
59	South Africa	2340	1.4	0.3	13.2	/	/ /	/	. .	. .
60	Turkey	1160	2.9	1.2	42.4	/	1.8/12.5/13.2	242/0.5	22.0	22.8
61	Iraq	3020*				/40*	/ /	4/	. .	. .
62	Botswana	960	8.4	8.4	9.8	40*/55*	5.6/19.4/7.0	103/11.6	1.0	3.8
63	Viet Nam					/	/ /	109/	. .	. .
64	Madagascar	260	−1.6	−6.6	14.4	50/50	/ /	156/7.0	3.5	. .

Note: nations are listed in descending order of their 1985 under-five mortality rates (see table 1)

		GNP per capita (US $, 1984)	GNP per capita average annual growth rate (%) 1965-84	1980-84	Rate of inflation (%) 1973-1984	% of population below absolute poverty level 1977-1984 urban/rural	% of central govt. expenditure allocated to health/education/defence 1983	ODA inflow in millions US $ (1984) as % of recipient GNP (1984)	Debt service as % of exports of goods and services 1970	1984
	Middle U5MR countries (30–94) Median	**1480**	**2.9**	**−0.5**	**11.9**	**21/38**	**7.1/13.7/10.6**	**149/1.3**	**9.3**	**14.1**
65	Papua New Guinea	710	0.6	−2.6	6.8	10/75	9.2/20.9/4.2	322/13.8	0.6	12.9
66	Ecuador	1150	3.8	−2.8	17.8	40/65	7.5/26.0/10.6	136/1.5	8.6	33.4
67	Brazil	1720	4.6	1.3	71.4	/	7.3/3.7/4.1	161/0.1	12.5	26.6
68	Burma	180	2.3	4.1	6.0	40/40	/	275/4.3	15.9	36.9
69	El Salvador	710	0.6	−7.2	11.3	20/32	8.4/16.6/15.8	263/6.6	3.6	17.2
70	Dominican Rep.	970	3.2	−1.1	9.0	45/43	10.5/15.3/8.7	198/4.2	4.6	18.0
71	Philippines	660	2.6	−1.3	12.9	32/41	6.8/25.6/13.6	397/1.2	7.3	14.1
72	Mexico	2040	2.9	−0.6	31.5	/	1.2/11.0/2.0	83/0.1	23.6	34.3
73	Colombia	1390	3.0	−0.4	23.8	34/	/ /	88/0.2	12.0	20.6
74	Syrian Arab Rep.	1620	4.5	0.3	11.9	/		859/5.3	11.0	12.9
75	Jordan	1570	4.8	2.5	9.6	14/17	3.6/11.5/25.6	677/18.0	3.6	14.8
76	Mongolia					/	/ /			
77	Paraguay	1240	4.4	1.5	12.9	19/50	3.7/12.0/12.5	50/1.3	11.8	13.0
78	Lebanon					/	/ /	77/		
79	Thailand	860	4.2	3.1	8.2	15/34	5.1/20.7/19.8	475/1.1	3.4	12.0
80	Albania					/	/ /			
81	China	310	4.5	7.3	1.8	/	/ /	798/0.3		
82	Sri Lanka	360	2.9	3.1	14.9	/	/ /	468/8.0	10.3	11.2
83	Venezuela	3410	0.9	−5.2	11.7	/	8.6/19.1/5.2	14/	2.9	13.4
84	United Arab Emirates	21920		−2.3	8.7	/	7.7/9.8/43.2	/		
85	Guyana	590	0.5	−2.2	7.8	/	/ /	/		
86	Argentina	2230	0.3	−3.8	180.8	30*/35*	1.4/7.6 /9.1	49/0.1	21.5	29.1
87	Malaysia	1980	4.5	3.6	6.2	21/59	/ /	327/1.1	3.6	7.7
88	Korea, Dem. Rep. of					/	/ /	/		
89	Korea, Rep. of	2040	2.9	3.4	17.6	18/11	1.6/20.5/31.9		19.4	13.5
90	Panama	1980	2.6	1.9	6.7	21/30	13.1/11.0/	72/1.1	7.7	7.9
91	Mauritius	1090	2.7	−1.0	12.7	12/12	7.8/15.6/0.9	36/3.5	3.0	14.8
92	Uruguay	1980	1.8	−3.7	50.0	25*/	3.4/6.5 /12.7	4/0.1	21.6	29.8
93	Romania	2560*		2.7		/	0.8/2.5 /5.5	/		12.3
94	Yugoslavia	2110	6.6	−0.2	24.6	/	/ /	3/	9.9	6.8
	Low U5MR countries (under 30) Median	**7260**	**2.6**	**0.8**	**10.2**	**. ./. .**	**8.9/8.7 /8.3**	**. ./. .**	**. .**	**. .**
95	USSR	4550*				/	/ /	/		
96	Chile	1700	−0.1	−1.9	75.4	35*/45*	6.0/13.7/12.0	2/	19.0	26.2
97	Trinidad and Tobago	7150	2.6	−10.4	15.6	/39	/ /	5/0.1	4.4	2.4
98	Jamaica	1150	−0.4	−2.8	16.6	/60		170/8.2	2.7	21.0
99	Kuwait	16720	−0.1	−4.6	9.2	/	6.2/10.1/13.3	/		
100	Costa Rica	1190	1.6	−3.5	24.1	/	22.5/19.4/3.0	217/6.7	10.0	25.3
101	Portugal	1970	3.5	−0.3	20.5	/	/ /	98/0.5		35.6
102	Bulgaria	4150*				/	/ /	/		
103	Hungary	2100	6.2	1.8	4.3	/	/ /	/		24.2
104	Poland	2100*	1.5		19.4	/	/ /	/		
105	Cuba					/	/ /	12/		
106	Greece	3770	3.8	−0.3	17.3	/	/ /	13/	9.3	18.3
107	Czechoslovakia	5820*				/		/		
108	Israel	5060	2.7	−0.4	84.4	/	4.3/8.4 /29.0	1256/6.3	2.7	17.9
109	New Zealand	7730	1.4	2.1	13.6	/	12.6/11.9/4.9	/		
110	Austria	9140	3.6	1.7	5.3	/	7.1/7.9 /9.7	/		
111	Belgium	8610	3.0	0.6	6.4	/	1.7/13.9/5.2	/		
112	German Dem. Rep.	7180*				/	/ /	/		
113	Italy	6420	2.7	0.8	17.2	/	11.5/8.6 /3.5	/		
114	USA	15390	1.7	0.9	7.4	/	10.7/1.9 /23.7	/		
115	Germany, Fed. Rep. of	11130	2.7	1.0	4.1	/	18.6/0.8 /9.3	/		
116	Ireland	4970	2.4	0.6	14.4	/	/ /	/		
117	Singapore	7260	7.8	7.2	4.4	/	6.4/21.6/18.5	41/0.2	0.6	1.0
118	Spain	4440	2.7	−0.1	16.4	/	0.6/6.0 /4.4	/		
119	United Kingdom	8570	1.6	0.7	13.8	/	/ /	/		
120	Australia	11740	1.7	1.4	10.2	/	7.1/7.9 /9.7	/		
121	France	9760	3.0	0.3	10.7	/	14.6/8.2 /7.3	/		
122	Hong Kong	6330	6.2	6.0	9.8	/	/ /	14/	0.0	0.2
123	Canada	13280	2.4	0.6	9.2	/	6.3/3.6 /8.0	/		
124	Denmark	11170	1.8	1.1	9.4	/	/ /	/		
125	Netherlands	9520	2.1	−0.2	5.9	/	11.3/11.2/5.3	/		
126	Norway	13940	3.3	2.5	9.4	/	10.6/8.8 /8.6	/		
127	Japan	10630	4.7	3.5	4.5	/	/ /	/		
128	Switzerland	16330	1.4	1.5	3.9	/	13.4/3.1 /10.4	/		
129	Finland	10770	3.3	2.7	10.7	/	10.6/13.8/5.5	/		
130	Sweden	11860	1.8	0.9	10.2	/	1.5/9.2 /6.9	/		

TABLE 7: BASIC INDICATORS ON LESS POPULOUS COUNTRIES

		Under 5 mortality rate		Infant mortality rate (under 1)		Total population (millions)	Annual no. of births/infant and child deaths (0-4) (thousands)	GNP per capita US $	Life expectancy at birth (years)	% adults literate male/female	% of age group enrolled in primary school
		1960	1985	1960	1985	1985	1985	1984	1985	1985	male/female 1982-1984
1	Gambia	361	292	205	169	0.6	32/9	260	36	36/15	85/51
2	Djibouti				152*	0.4	./.	480*		./.	./.
3	Equatorial Guinea	315	223	188	132	0.4	17/4	180*	45	./.	./.
4	Swaziland	227	182	152	124	0.7	31/6	790	50	70/64	114/109
5	Gabon	286	178	171	108	1.2	41/7	4100	50	70/53	127/117
6	Comoros	216	135	128	85	0.4	21/3	340	51	56*/40*	107*/76*
7	Maldives				75*	0.2	./.	400*		83*/82*	./.
8	Cape Verde	213	95	143	70	0.3	11/1	320	60	61/39	./.
9	Vanuatu		75*			0.1	./.	350*		57*/48*	./.
10	Sao Tome and Principe				50*	0.1	./.	330		73*/42*	./.
11	Solomon Islands				46*	0.3	./.	640*		./.	./.
12	St. Christopher/Nevis				41*	(.)	./.	1150		./.	./.
13	Dominica				40*	0.1	./.	1010		./.	./.
14	Qatar	239	43	145	35*	0.3	11/(.)	19810	71	51*/.	105/101
15	Saint Vincent				33*	0.1	./.	840		./.	./.
16	Samoa				33*	0.2	./.			./.	./.
17	Suriname	96	41	70	33	0.4	11/(.)	3510	69	68*/63*	124*/115*
18	Antigua and Barbuda				30*	0.1	./.	1860		./.	./.
19	Bahrain	208	35	130	30	0.4	14/(.)	10470	70	79/64	107/93
20	Fiji	98	34	71	29	0.7	21/1	1860	70	90/81	111/109
21	Belize				23*	0.2	./.	1110		./.	./.
22	Bahamas				23	0.2	./.	6690		./.	./.
23	Saint Lucia				18*	0.1	./.	1130		./.	./.
24	Cyprus	36	17	30	16	0.7	13/(.)	3650	75	./.	./.
25	Grenada				14*	0.1	./.	860		./.	./.
26	Seychelles				14*	0.1	./.	2430*		./.	103*/102*
27	Barbados	91	16	74	11	0.3	5/(.)	4370	73	./.	107/106
28	Brunei Darussalam				12	0.2	./.	20520*		85*/69*	./.
29	Malta	42	14	37	12	0.4	7/(.)	3360	72	86/82	98/92
30	Luxembourg	41	11	33	9	0.4	4/(.)	13160	72	./.	./.
31	Iceland	22	8	17	6	0.2	5/(.)	11020	77	./.	97/101

Note: nations are listed in descending order of their 1985 under-five mortality rates (see table 1)

General note on the data

The data provided in these tables are accompanied by definitions, sources, explanations of signs and individual footnotes where the definition of the figure is different from the general definition being used. Tables derived from so many sources – nine major sources are listed in the explanatory material – will inevitably cover a wide range of reliability. Official government data received by the responsible United Nations agency have been used wherever possible. In the many cases where there are no reliable official figures, estimates made by the responsible United Nations agency have been used. Where such internationally standardized estimates do not exist, the tables draw on data from relevant UNICEF field offices. All such UNICEF field office sources are marked with * or Y.

The figures for under-five and infant mortality rates, life expectancy, crude birth and death rates, etc. are part of the regular work on estimates and projections undertaken by the United Nations Population Division. These and other international estimates are revised periodically, which explains why some of the data differ from those found in earlier UNICEF publications. In the case of GNP per capita and ODA, the data are the result of a continuous process of revising and updating by the World Bank and OECD respectively.

Where possible only comprehensive or representative sample national data have been used although, as in the table on "Wasting", there are certain exceptions. Where the figures refer to only a part of the country, this is indicated in a footnote.

Signs and explanations

Unless otherwise stated, the summary measures for the four U5MR (under-five mortality rate) groups of countries are the median values for each group. The median is the middle value of a data set arranged in order of magnitude. The median is the average commonly used where there are a large number of items of data with a great range, as is the case in these tables, and it has the advantage of not being distorted by the very small or the very large countries. In cases where the range of the data is not all that extensive, the most commonly used average is the mean, which is the sum of all the values divided by the number of the items. However, because we are dealing here with countries of very different sizes of population, we immediately encounter the problem of weighting. Hence the choice of the median to give the reader some idea of the situation in a typical country of the appropriate U5MR group.

.. Data not available.

* UNICEF field office source.

(.) Less than half the unit shown.

T Total (as opposed to a median).

X See footnote at the end of the tables.

Y UNICEF field office source; see footnote at the end of the tables.

Most of the U5MR figures are interpolations based on five-year estimates prepared by the UN Population Division on an internationally comparable basis using various sources. In some cases, these interpolated estimates may differ from the latest national figures.

Footnotes to Tables

Table 1:
Basic Indicators

Sierra Leone	Primary enrolment	1979
Mozambique	GNP per capita	1980
Angola	GNP per capita	1980
Niger	Primary enrolment	1981
Chad	GNP per capita	1982
Liberia	Primary enrolment	1980
Bhutan	GNP per capita	1981
Burundi	Adult literacy	1982
Sudan	Adult literacy	1983
Tanzania, U. Rep. of	Adult literacy	1983
Haiti	Primary enrolment	1981
Lao People's Dem. Rep.	GNP per capita	1981
	Primary enrolment	1981
Zaire	Primary enrolment	1978
Egypt	Household income	1974
Peru	Household income	1972
Saudi Arabia	Adult literacy	1982
Iraq	GNP per capita	1980
Viet Nam	Adult literacy	1979
	Primary enrolment	1980
Brazil	Household income	1970
Philippines	Household income	1970–1
Mongolia	Adult literacy	1982
Thailand	Primary enrolment	1980
Sri Lanka	Household income	1969–70
Venezuela	Household income	1970
United Arab Emirates	Adult literacy	1975
Argentina	Household income	1970
Malaysia	Household income	1973
Korea, Dem. Rep. of	Primary enrolment	1976
Korea, Rep. of	Adult literacy	1982
Panama	Household income	1970
Uruguay	Adult literacy	1975
Romania	GNP per capita	1983
USSR	GNP per capita	1980
Chile	Adult literacy	1984
Costa Rica	Household income	1971
Portugal	Household income	1973–4
Bulgaria	GNP per capita	1980
Poland	GNP per capita	1980
Cuba	Adult literacy	1981, age 10 +
Czechoslovakia	GNP per capita	1980
German Dem. Rep.	GNP per capita	1980
Ireland	Primary enrolment	1981
	Household income	1973

Table 2:
Nutrition

Sierra Leone	Breast-feeding	1978
Ethiopia	Breast-feeding	1977
Somalia	Malnutrition	Age 0–6
Burkina Faso	Wasting	1978
Angola	Breast-feeding	1976, duration not stated
Liberia	Malnutrition	1976
Rwanda	Breast-feeding	Duration not stated
Yemen	Breast-feeding	1979
	Malnutrition	1979
	Wasting	1979
Yemen, Dem.	Breast-feeding	1978, rural only
	Wasting	1978
Nepal	Breast-feeding	1976
	Malnutrition	1975
	Wasting	1975
Bangladesh	Breast-feeding	1976
Sudan	Breast-feeding	1979
Bolivia	Breast-feeding	1977
	Malnutrition	1979
Haiti	Breast-feeding	1977
	Wasting	1978
Uganda	Malnutrition	Between 70% and 80% standard weight for length Less than 70% standard weight for length
Pakistan	Breast-feeding	1974–6
Zaire	Breast-feeding	1975–6
Cameroon	Breast-feeding	1978
Togo	Breast-feeding	1977
	Wasting	1977
Lesotho	Breast-feeding	1976
Egypt	Breast-feeding	1978
	Malnutrition	1978, pre-school population
	Wasting	1978
Peru	Breast-feeding	1977–8
	Malnutrition	1972
Morocco	Malnutrition	1971
Congo	Malnutrition	Age 0–15
Kenya	Breast-feeding	1978
	Wasting	1979
Tunisia	Malnutrition	1975
	Wasting	1974

Guatemala	Breast-feeding	1978
Nicaragua	Malnutrition	1975
Botswana	Breast-feeding	1979
Papua New Guinea	Malnutrition	1978, age unspecified
	Wasting	1975
Ecuador	Malnutrition	Age 0–6
Brazil	Malnutrition	Age 0–17
	Wasting	1974
Burma	Malnutrition	Age 0–3
Dominican Rep.	Breast-feeding	1975
Philippines	Breast-feeding	1978
	Malnutrition	Age 0–6
	Wasting	1976
Mexico	Breast-feeding	1976
Syrian Arab Rep.	Breast-feeding	1978
Jordan	Breast-feeding	1976
	Wasting	1975
Paraguay	Breast-feeding	1979
Thailand	Breast-feeding	1979
	Wasting	1978
Sri Lanka	Breast-feeding	1975
	Wasting	1976
Venezuela	Breast-feeding	1977
Malaysia	Breast-feeding	1974
Korea, Rep. of	Breast-feeding	1974
Panama	Breast-feeding	1979
	Malnutrition	1975
Trinidad and Tobago	Breast-feeding	1977
Jamaica	Breast-feeding	1976
Costa Rica	Breast-feeding	1976
	Malnutrition	1978
Hungary	Breast-feeding	1975–6
Poland	Breast-feeding	1977
Hong Kong	Breast-feeding	1974
Canada	Breast-feeding	1978
Netherlands	Breast-feeding	1975

Table 3:
Health

Afghanistan	Drinking water	1980
Sierra Leone	Immunization	Age 1–2
Guinea	Drinking water	1980
	Immunization	1983
Mozambique	Drinking water	1980
	Tetanus	1982
Burkina Faso	Drinking water	1980
Angola	Immunization	Age 1–2
	Tetanus	1983
Niger	Tetanus	1983
Central African Rep.	Drinking water	1980
	Immunization	Age 1–2
Chad	Drinking water	1980
Senegal	Immunization	Age 0–2
Benin	Drinking water	1980
Bolivia	Measles	Age 1–5
Pakistan	Health services	1978
Zaire	DPT	1983
Cameroon	Drinking water	1980
Cote d'Ivoire	Immunization	Age 0–3
Lesotho	Drinking water	1980
Egypt	Drinking water	1980
Peru	Measles	Age 1–5
Libyan Arab Jamahiriya	Drinking water	1980
Indonesia	DPT	2 doses only
Congo	Immunization	Age 1–2
Zimbabwe	Drinking water	1980
	Tetanus	1983
Honduras	Measles	Age 1–5
Tunisia	Immunization	Age 18–30 months
Guatemala	DPT, polio	Age 1–4
Nicaragua	Tetanus	1982
Turkey	Drinking water	1977
Iraq	Drinking water	1980
Papua New Guinea	DPT	2 doses only
Ecuador	Measles	Age 1–5
Brazil	Polio	1980, 2 doses only
	Polio	1985, age 0–4
Burma	Polio	1982
El Salvador	Drinking water	1980
	Polio	2 doses only
Dominican Rep.	Polio	Age 0–3
	Measles	Age 1–5
Mexico	Measles	1980, age 1–5
	Measles	1984, age 1–4
Colombia	Tetanus	1983
Syrian Arab Rep.	Drinking water	1980
Jordan	Drinking water	1980
	Tuberculosis	1983

Lebanon	Drinking water	1980
	Immunization	1982
China	Drinking water	1980
United Arab Emirates	Drinking water	1980
Guyana	Measles	1982
Korea, Rep. of	Measles	1980, age 1–5
	Measles	1982, age 9–24 months
Mauritius	Drinking water	1980
	Measles	1982
Uruguay	Measles	Age 1–5
Yugoslavia	Immunization	1983
	Measles	Age 1–5
USSR	Measles	Age 1–5
Trinidad and Tobago	Tetanus	1983
Jamaica	Drinking water	1975
	Measles	1982
Kuwait	Drinking water	1975
	Measles	Age 1–2
Portugal	Tuberculosis, DPT	1983
Hungary	Measles	Age 1–5
Poland	Immunization	1983
Cuba	Polio	2 doses only
Greece	Tuberculosis	1983
Czechoslovakia	Measles	Age 1–5
Israel	Immunization	1982
New Zealand	DPT, polio	1983, 2 doses only
	Measles	Age 1–5
Austria	Measles	1983, age 1–5
Belgium	Measles	Age 1–5
Italy	DPT	1983, 2 doses only
	Polio	1983
USA	Measles	1982, age 1–5
Germany, Fed. Rep. of	Measles	Age 1–5
Ireland	DPT	1983
Singapore	Measles	Age 1–5
United Kingdom	Immunization	1983
	Measles	Age 1–5
France	Measles	1983
Hong Kong	Measles	1982
Denmark	Tuberculosis	1983
Norway	Tuberculosis	1983
Japan	Tuberculosis	1983
	DPT	1982
	Polio	1982, 2 doses only
	Measles	1980 and 1982, age 1–5
Finland	Immunization	1983
Sweden	Immunization	1983
	DPT	DT only
	Measles	Age 1–5

Table 4:
Education

Mali	Primary completion	1977
Sierra Leone	Primary enrolment	1978
	Primary completion	1976
	Secondary enrolment	1979
Niger	Primary enrolment	1981
	Primary completion	1977
Chad	Primary completion	1975
Liberia	Primary enrolment	1980
	Secondary enrolment	1980
Bhutan	Primary completion	1978
Burundi	Adult literacy	1982
Sudan	Adult literacy	1983
Bolivia	Primary enrolment	1980
	Primary completion	1976
Tanzania, U. Rep. of	Adult literacy	1983
Haiti	Primary enrolment	1981
	Primary completion	1978
	Secondary enrolment	1981
Uganda	Primary completion	1978
Oman	Primary completion	1977
Lao People's Dem. Rep.	Primary enrolment	1981
	Secondary enrolment	1981
Zaire	Primary enrolment	1978
	Primary completion	1976
	Secondary enrolment	1978
Cameroon	Primary completion	1979
Iran (Islamic Rep. of)	Primary completion	1969
India	Primary completion	1972
Cote d'Ivoire	Primary completion	1978
Ghana	Primary completion	1977
Lesotho	Primary completion	1978
Peru	Primary enrolment	1981
Saudi Arabia	Adult literacy	1982
Iraq	Primary completion	1978
Viet Nam	Adult literacy	1979
	Primary enrolment	1980
	Primary completion	1977
	Secondary enrolment	1980

Ecuador	Primary completion	1978
Brazil	Primary enrolment	1979
	Secondary enrolment	1980
Burma	Primary enrolment	1977
	Secondary enrolment	1977
Colombia	Primary completion	1978
Mongolia	Adult literacy	1982
	Primary completion	1978
Paraguay	Primary completion	1977
Thailand	Primary enrolment	1980
	Primary completion	1976
	Secondary enrolment	1980
Venezuela	Primary completion	1978
United Arab Emirates	Adult literacy	1975
Argentina	Primary completion	1975
Korea, Dem. Rep. of	Primary enrolment	1976
Korea, Rep. of	Adult literacy	1982
Uruguay	Adult literacy	1975
	Secondary enrolment	1980
Chile	Adult literacy	1984
Trinidad and Tobago	Primary enrolment	1981
Portugal	Primary completion	1974
Cuba	Adult literacy	Age 10+
Greece	Primary enrolment	1980
Ireland	Primary enrolment	1981
	Secondary enrolment	1981
Norway	Primary enrolment	1981
Sweden	Primary enrolment	1981

Table 5:
Demographic indicators

There are no footnotes to table 5.

Table 6:
Economic Indicators

Afghanistan	GNP per capita growth rate	1980–2
Mali	Poverty level	1975
Ethiopia	Poverty level	1976
Mozambique	GNP per capita	1980
Angola	GNP per capita	1980
Niger	Poverty level	1975
Chad	GNP per capita	1982
	GNP per capita growth rate	1980–2
Rwanda	Poverty level	1975
Bhutan	GNP per capita	1981
Sudan	Poverty level	1975
Bolivia	Poverty level	1975
Lao People's Dem. Rep.	GNP per capita	1981
Zaire	Poverty level	1975
Iran (Islamic Rep. of)	GNP per capita growth rate	1980–3
Egypt	Poverty level	1976
Iraq	GNP per capita	1980
	Poverty level	1975
Botswana	Poverty level	1971–2
Romania	GNP per capita	1983
USSR	GNP per capita	1980
Bulgaria	GNP per capita	1980
Poland	GNP per capita	1980
Czechoslovakia	GNP per capita	1980
German Dem. Rep.	GNP per capita	1980

Table 7:
Basic Indicators on less populous countries

Djibouti	GNP per capita	1981
Equatorial Guinea	GNP per capita	1981
Comoros	Adult literacy	1982
	Primary enrolment	1980
Maldives	GNP per capita	1981
	Adult literacy	1977
Vanuatu	GNP per capita	1981
	Adult literacy	1979
Sao Tome and Principe	Adult literacy	1982
Solomon Islands	GNP per capita	1983
Qatar	Adult literacy	1981
Suriname	Adult literacy	1978
	Primary enrolment	1978
Seychelles	GNP per capita	1983
Brunei Darussalam	GNP per capita	1983
	Adult literacy	1982

Definitions

Under-five mortality rate: annual number of deaths of children under 5 years of age per 1,000 live births.

Infant mortality rate: annual number of deaths of infants under 1 year of age, per 1,000 live births.

Life expectancy at birth: the number of years new-born children would live if subject to the mortality risks prevailing for the cross-section of population at the time of their birth.

Crude death rate: annual number of deaths per 1,000 population.

Crude birth rate: Annual number of births per 1,000 population.

Total fertility rate: the number of children that would be born per woman, if she were to live to the end of her child-bearing years and bear children at each age in accordance with prevailing age-specific fertility rates.

Low birth-weight: under 2,500 grammes.

Breast-feeding: either wholly or partly breast-feeding.

Prevalence of wasting (acute malnutrition): the percentage of children with greater than minus two standard deviations from the 50th percentile of the weight-for-height reference population, i.e. roughly less than 77% of the median weight-for-height of the United States National Center for Health Statistics reference population.

DPT: diphtheria, pertussis (whooping cough) and tetanus.

ORS: oral rehydration salts.

Adult literacy rate: percentage of persons aged 15 and over who can read and write.

GNP: gross national product. Annual GNPs per capita are expressed in current United States dollars. GNP per capita growth rates are annual average growth rates that have been computed by fitting trend lines to the logarithmic values of GNP per capita at constant market prices for each year of the time period.

Absolute poverty level: that income level below which a minimum nutritionally adequate diet plus essential non-food requirements is not affordable.

ODA: official development assistance.

Income share: the percentage of private income received by the highest 20% and lowest 40% of households.

Child malnutrition: mild or moderate: between 60% and 80% of the desirable weight-for-age; severe: less than 60% of the desirable weight-for-age.

Primary and secondary enrolment ratios: the gross enrolment ratio is the total number of children enrolled in a schooling level – whether or not they belong in the relevant age group for that level – expressed as a percentage of the total number of children in the relevant age group for that level; the net enrolment ratio is the total number of children enrolled in a schooling level who belong in the relevant age group, expressed as a percentage of the total number of children in that age group.

Children completing primary school: percentage of the children entering the first grade of primary school who successfully complete that level in due course.

Debt service: the sum of interest payments and repayments of principle on external public and publicly guaranteed debts.

Main Sources

Under-five and infant mortality:	United Nations Population Division and United Nations Statistical Office
Total population:	United Nations Statistical Office and United Nations Population Division
Child population:	United Nations Population Division
Births:	United Nations Population Division
Infant and child deaths:	United Nations Population Division and UNICEF
GNP:	World Bank
Life expectancy:	United Nations Population Division
Adult literacy:	United Nations Educational, Scientific and Cultural Organization (UNESCO)
Radio receivers:	United Nations Educational, Scientific and Cultural Organization (UNESCO)
School enrolment and completion:	United Nations Educational, Scientific and Cultural Organization (UNESCO)
Access to health services:	World Health Organization (WHO)
Household income:	World Bank
Immunization:	World Health Organization (WHO) and UNICEF field offices
ORS:	World Health Organization (WHO)
Low birth-weight:	World Health Organization (WHO)
Breast-feeding:	World Health Organization (WHO) and World Fertility Survey
Child malnutrition:	UNICEF field offices
Wasting:	World Health Organization (WHO)
Food production and calorie intake:	Food and Agriculture Organization of the United Nations (FAO) and World Bank
Access to drinking water:	World Health Organization (WHO)
Crude death and birth rates:	World Bank
Population growth rate:	United Nations Population Division
Total fertility rate:	United Nations Population Division
Urban population:	United Nations Population Division
Inflation:	World Bank
Absolute poverty:	World Bank
Official development assistance:	Organisation for Economic Cooperation and Development (OECD)
Expenditure on health education defence:	World Bank
Debt service:	World Bank

UNICEF Headquarters
UNICEF House, 3 UN Plaza, New York, NY 10017, USA

UNICEF Geneva Headquarters
Palais des Nations, CH-1211, Geneva 10, Switzerland

UNICEF Regional Office for Eastern and Southern Africa
P.O. Box 44145, Nairobi, Kenya

UNICEF Regional Office for Central and West Africa
P.O. Box 443, Abidjan 04, Côte d'Ivoire

UNICEF Regional Office for the Americas and the Caribbean
Apartado Aéreo 75 55, Bogotá, Colombia

UNICEF Regional Office for East Asia and Pakistan
P.O. Box 2-154, Bangkok 10200, Thailand

UNICEF Regional Office for the Middle East and North Africa
P.O. Box 811721, Amman, Jordan

UNICEF Regional Office for South Central Asia
73 Lodi Estate, New Delhi 110003, India

UNICEF Office for Nigeria
P.O. Box 1282, Lagos, Nigeria

UNICEF Office for the People's Republic of China
12 Sanlitun Lu, Beijing, China

UNICEF Office for Australia and New Zealand
G.P.O. Box 4045, Sydney NSW 2001, Australia

UNICEF Office for Japan c/o United Nations Information Centre, 22nd Floor, Shin Aoyama Building Nishikan
1-1, Minami - Aoyama 1-Chome, Minato-ku Tokyo 107, Japan

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The main theme of the 1987 report is that it is now just as unacceptable to allow millions of children to die each year in the 'silent emergency' of needless infection and malnutrition as it is to let them die on our television screens in the 'loud emergencies' of drought and famine. For the first time, the world now has the means to attack childhood malnutrition and disease on a massive scale and at an affordable cost. And as a dramatic demonstration of this new potential, the lives of over 4 million children have already been saved – in the last five years alone – by nations which have mobilized to put today's low-cost solutions into effect.

Inset panels document this experience, nation by nation, and describe the new methods being used to bring about a drastic improvement in child survival and development.

At the end of the report is a full statistical section with all-nation figures on nutrition, health, education, population, and economic progress. In keeping with the central message of The State of the World's Children, these statistical tables list the nations of the world in order of their child survival rates.

Permission to re-print the State of the World's Children report may be obtained from the Division of Information and Public Affairs, UNICEF, UNICEF House, 3 UN Plaza, New York, NY 10017, USA.

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